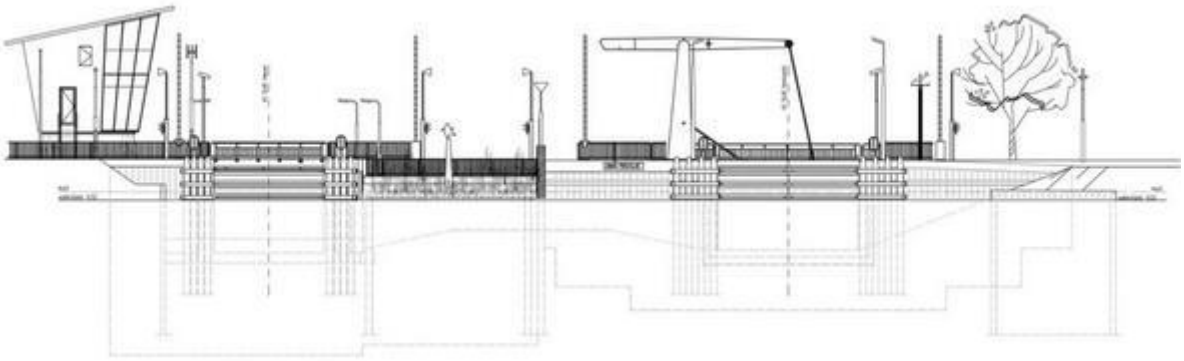
Area-oriented planning of navigation locks in the Netherlands



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21-02-2014, Groningen

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“alleen ga je sneller, samen kom je verder”

Preface

In front of you lies the graduate thesis with which I will end the Master Environmental & Infrastructure Planning. It marks the end of my time as a student, a period to which I look back with great pleasure. It is also the end of my internship at Rijkswaterstaat. In the past six month I became familiar with the organisation and met many interesting persons. It has been a valuable addition to my education and I'm happy to have written my thesis at Rijkswaterstaat. In the past six months I also experienced how it is to be an academic researcher. Setting my research question and objective has been a real struggle but doing the research was mostly enjoyable. Doing the interviewees was the most fun, I found it very inspiring to meet these dedicated and proud people. Writing my thesis was again quite a struggle but I'm glad with the final result, I hope you will enjoy reading it.

I'm very grateful to Arjan Hijdra, my prime supervisor. As mentor and sparring partner he has helped me through the complete process and was always ready to answer my questions. I also want to thank Jos Arts, my other supervisor. His remarks always put my feet back on the ground but have been very valuable to my research. I'm also very grateful to all the interviewees who were willing to cooperate. There insights have provided me the major part of the data and their contribution has therefore been crucial for my research. During my internship at Rijkswaterstaat I was part of the Hydraulic Engineering & Eco-technology unit and from the first week on I felt at home. It was nice and instructive to be part of the unit for half a year and I want to thank all its members for the pleasant period, which also counts for all employees I worked with on the 10th floor. Finally I want to thank my family, in the first place for correcting my thesis, but mostly for making everything possible and for their support in the past years.

Tjeerd Burger

Groningen, 21 February 2014

Abstract

Current infrastructure planning faces some ongoing difficulties that affect the development of infrastructure. Next to that, different societal dynamics such as a more apparent public voice and the demand for sustainable development also affect the planning of infrastructure. Therefore, a different approach to infrastructure planning is needed. The approach known as area-oriented planning is advocated as the way out, stimulating integrated and sustainable infrastructure development. Area-oriented planning integrates infrastructure development with land-use planning and aims at synergetic effects through integration. It is in line with a broad shift of attention towards policy integration and can be witnessed in other planning fields, such as urban planning and environmental planning. Its application in the planning of waterways remains however underexposed. Lock projects, the object of study, might have a limited spatial impact compared to road projects, but as it is host to multiple functions it offers good opportunities for integrated infrastructure development.

Therefore, the aim of this research is to consider to what extent area-oriented planning is embedded in the planning of navigation locks in the Netherlands. Through a multiple-case study research three ongoing lock projects are analysed. First, by applying the Omgevingswijzer the spatial-functional dimension of the projects is considered and second, institutional-capacity building is examined to consider the organizational arrangements dimension, which is mainly done through analysing ten interviews with Rijkswaterstaat employees involved in lock projects.

The results show that the lock projects have moved beyond the traditional and sectoral approaches but are still far from integrated. The focus remains dominantly on the transport objective and synergetic results are only occasionally witnessed. Negative effects on social and natural aspects are mitigated and compensated but the project is not used to improve these aspects. An explanation is sought in the governance style used by looking at building and exploiting institutional capacity. The results indicate that this is only done to a limited degree, hampering the adoption of area-oriented planning. Integrative place-making through visionary plans which connects actors is witnessed, for example by building ‘the most sustainable lock of the world’, but these plans only partly survive. Collaboration in policy-making proves to be difficult in some cases, while the lack of a sense of ownership clearly deteriorates the results. While cooperation should be aimed at linking interests, it is found to be mainly based on the alignment of developments to promote the own self-interest. Several prerequisites are found which seem necessary to set up a successful cooperation:

- Having the skills and capacity
- Presence of ambassadors
- An early start and long-time efforts
- Building relationships based on trust and understanding

The value of local knowledge is showed by several cases, but it is only limited obtained as Rijkswaterstaat takes an instrumental approach to participation. Participation is mainly limited to informing the public, showing only some signs of consultation, and therefore prevents the community to join and to actively shape the identity of their places.

Another aspect that hampers the adoption of area-oriented planning is the project's control. The project's principals mainly focus on staying within budget and time, which discourages the creation of extra value and does not stimulate integrated and sustainable development. This is contradicting to how Rijkswaterstaat presents itself, as it states to promote sustainable development and area-oriented development, with liveability even included in its mission statement. This dichotomy is therefore confusing for both Rijkswaterstaat's employees and partners.

It can be concluded that area-oriented planning is only embedded to a minor degree in the planning of locks. The spatial-functional dimension has shown that other interests are only limited involved, while the organizational arrangements dimension shows that Rijkswaterstaat has failed to adopt a governance style aimed at institutional capacity-building. Institutional capacity-building has proved its use in several cases but is only used and build to a limited degree and its full strength is not exploited by Rijkswaterstaat. Adopting a governance style that aims to build institutional capacity is therefore an important recommendation to foster the adoption of area-oriented planning. Another recommendation concerns the role of Rijkswaterstaat. Especially the top managers should take a clear decision about the organization's exact role. If Rijkswaterstaat is really willing to step up for sustainable development and the enhancement of liveability, then it should also assign the necessary funds and capacities and include it in the project's scope.

Keywords: Area-oriented planning, institutional capacity building, navigation locks, Rijkswaterstaat, Omgevingswijzer

Short summary in Dutch / korte samenvatting in het Nederlands

Als antwoord op de maatschappelijke ontwikkelingen en problemen in de huidige infrastructuur planning wordt steeds vaker voor gebiedsgerichte planning gepleit. Het wordt voorlopig voornamelijk toegepast bij de aanleg van snelwegen maar de toepassing ervan bij vaarwegen is onbelicht. Vandaar dat dit onderzoek zich richt op de vraag in hoeverre er gebiedsgericht wordt gewerkt in vaarweg projecten. Om een indruk te krijgen zijn drie sluisprojecten van Rijkswaterstaat geanalyseerd en zijn betrokkenen geïnterviewd. De sluisprojecten laten zien dat men verder is dan de traditionele, sectorale aanpak maar dat ze nog ver weg staan van de integrale en duurzame ontwikkeling van infrastructuur. De focus ligt nog steeds zwaar op het netwerk en andere aspecten krijgen nog vaak onvoldoende aandacht. Negatieve effecten worden gemitigeerd en gecompenseerd volgens de wet maar het levert geen verbetering van de leefomgeving op. Een verklaring wordt gezocht in het gebruik van institutionele capaciteit, sinds het de betrokkenheid van andere actoren vergroot en gebiedsgericht werken faciliteert. Uit de interviews blijkt dat Rijkswaterstaat maar beperkt gebruik maakt van de voordelen die institutionele capaciteit biedt. Samenwerking met andere overheden blijkt in sommige gevallen lastig en is vaak gebaseerd op eigenbelang. Participatie blijft daarnaast hoofdzakelijk beperkt tot informeren, waardoor het gebruik van lokale kennis maar beperkt is. Daarnaast worstelt Rijkswaterstaat duidelijk met haar rol, zeker nu leefbaarheid onderdeel van haar missie is geworden. De sturing van projecten focust zwaar op de scope, wat sommigen frustreert en anderen niet motiveert om breder te kijken. Een verbetering moet dan ook worden gezocht in een verduidelijking van de rol van Rijkswaterstaat en een bewuster gebruik van institutionele capaciteit.

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Chapter 1: introduction to the topic

To introduce the theme of this thesis, the developments of Rijkswaterstaat and inland waterways are considered first, as well as the rise of area-oriented planning. This is followed by the motivation of this research and the introduction ends with the academic and societal relevance of this research.

1.1 Research topic: area-oriented planning

Starting as a semi-military organization, Rijkswaterstaat experienced some important changes after liberal reformers established a democratic state in 1848. Academies and institutes were established and a new generation of hydraulic engineers was born: civil engineers trained in an academic way. The heydays of Rijkswaterstaat started and several ambitious and successful projects were executed, such as the construction of the North Sea Canal. Lintsen (2005) refers to this period as the 'revolution of the engineers'. This successful period lasted until the 1950's and 1960's when Rijkswaterstaat was regarded as the 'ruler of the Delta'. A great trust in the technical abilities and the ability to shape the Dutch society through intelligent engineering was present. From a theoretical point of view an object-oriented type of planning was favored, following a hierarchical and top-down structure. An example of this traditional way of planning is the Dutch National Road Infrastructure Plan of the 1960s (Rijkswegenplan), connecting cities by straight lines of highways, regardless of harmful impacts (Heeres, Tillema, & Arts, 2012b). Although stakeholder involvement was very limited, this approach worked well in those times. People had great trust in the expertise of Rijkswaterstaat and their way of working was regarded to be fully legitimate.

However, in the 1970's and 1980's the tide started to turn and the prevailing technocratic discourse was destabilized, for various reasons. Schwarts (1993) describes three waves of change: the rise of the environmental movement, the democratization of Dutch society and the rise of the neo-liberal politico-economic ideology. The first wave, the rise of the environmental movements was boosted by the publication of *Limits to Growth* (Meadows, Meadows, Randers, & Behrens III, 1972) *,* which was also the beginning of the ever since rising attention for sustainable development. This was stimulated by globalization as economies, governments and also cultures and beliefs became more and more connected, stimulating the spread of knowledge and ideas. One of Rijkswaterstaat's triumphs, the Delta Works, was heavily criticized by environmentalists for its enormous ecological impact. The second wave, the Cultural Revolution (Lintsen, 2005), was the result of the desire of the people to be more involved in decision-making. The authoritarian attitude and lack of responsiveness to social demands and environmental issues of Rijkswaterstaat was no longer tolerated (Van den Brink, 2009). The role and position of the government was no longer taken for granted but had to be earned and legitimized through democratic processes. The third wave of change is in accordance with another major shift in the role of institutions, namely the emergence of governance. The government is not the only party involved in policy making and execution anymore; other parties such as private parties and NGO's gain more and more influence. The role of the government is diminishing in favor of the market and the people. This is in accordance with the idea of interdependency, in the 'network society' or power sharing world nobody is in charge and every party needs the other in the realization of their goals (Teisman, 2000) .

Failing to deal with these new systems of meaning had its consequences. Public opposition, project delays and cost-overruns were the results. Several so-called focusing projects (Lowry, 2006) demonstrated the crisis in which Rijkswaterstaat ended. Van den Brink (2009) indicates the closure of the Oosterschelde, the reclamation of the Markerwaard, the planned river dike improvements and the new A27 motorway through the Ameliswaard estate near Utrecht as the focusing projects for Rijkswaterstaat, destabilizing the technocratic discourse. These projects were heavily criticized and eroded away the good reputation of Rijkswaterstaat, which was labeled a 'state within a state' which developed plans in an 'ivory tower' (Van den Brink, 2009). Focusing events, which can also be natural disasters, can produce varying degrees of policy change, which indeed can be witnessed in the case of Rijkswaterstaat. Rijkswaterstaat developed four adaptation strategies to deal with these new systems of meaning: the introduction of integrated water management, the introduction of new internal and external relationships, the introduction of interactive planning and the development of the strategic function (Van den Brink, 2009).

First, to deal with the 'ecological' turn, biologists and ecologists were incorporated in the development of new water management policies and Integrated Water Management was adopted. Especially the national 'Room for the River' program (*Ruimte voor de rivier)* shows the successful and widely acknowledged 'ecological turn' in Dutch water management (Disco, 2002). Second, neo-liberal thoughts heavily influenced the way of working of Rijkswaterstaat, particularly inspired by the ideas of New Public Management (NPM). Rijkswaterstaat changed into a 'government business' by going through some major reorganizations. The new internal and external relations were based upon notions such as 'business-like management', 'contract is contract', 'market-like competition' and 'output steering' (Van den Brink, 2009). Rijkswaterstaat tried to become more of a 'government business' by privatizations and outsourcing of activities, tasks and internal decentralization. Furthermore, to institutionalize the strategic function a strategy department was established and strategic projects and scenario studies were implemented. The fourth adaptation strategy, interactive planning, was meant to bridge the gap between the technocratic Rijkswaterstaat and the users of the infrastructure. Based upon ideas of NPM, Rijkswaterstaat took a step towards the end users of infrastructure, not least to get rid of the bad reputation of being a 'state within a state'. Rijkswaterstaat tried to develop an interactive planning approach to give citizens, bureaucrats, administrators and companies, the four 'B's' (*burgers, bestuurders, bureaucraten, bedrijven*), more influence in decision-making. Through 'power fusion' an optimal, non-hierarchical cooperation between the four B's had to be realized. However, in contrast to the other adaptation strategies, the institutionalization of this wave of change was only marginal (Van den Brink, 2009). The pilot projects were small and took place at the margins of the organization. Rijkswaterstaat took an instrumental approach to interactive planning and used it to increase effectiveness instead of the legitimacy of policy making.

Looking at the organizational changes of Rijkswaterstaat, we can say that it only partly managed to incorporate the 'waves of change'. The crisis has been averted but Rijkswaterstaat has to remain conscious to changing societal dynamics in order to prevent another crisis. An example is the rise of sustainability and society is increasingly demanding sustainable development. Infrastructure planning

still faces difficulties due to a lack of space, huge conflicting interests, a changing institutional landscape, and growing influence of EU legislation (Arts, 2007). Furthermore, there is the recent emergence of a 'participatory society'. Maarten Hajer, director of the PBL, calls it the energetic society: a living together of responsible citizens with an unprecedented speed of reaction, ability to learn and creativity. The government currently uses too little of these abilities and as the energetic society has different demands the government should rethink its strategy and control (Hajer, 2011). Cooperation with this energetic society offers energy and power to improve the quality of life, but Hajer warns us: who doesn't win the energetic society for himself, will often find it turning against him. It is not clear why public agencies do not actively pursue solutions which are valuable to a large group of stakeholders, but instead limit themselves to achieve a minimum pre-agreed level of service. Infrastructure development currently focuses on acceptable development instead of the optimal development of infrastructure (Struiksma, Tillema, & Arts, 2008).

In reaction to the difficulties in infrastructure planning governments try to combat these problems through policy integration and more context-sensitive designs. In infrastructure planning we can therefore witness a development from traditional object-oriented planning towards what is known as area-oriented planning (Heeres, Tillema et al., 2012b). Through area-oriented planning other interests are incorporated in the infrastructure development, enhancing the quality of the surrounding area. Area-oriented planning is expected to better incorporate the needs, demands and opportunities of the surrounding area and is more sustainable through the integration with other policy sectors. The approach deals with current problems in infrastructure development through an integrated design and the multifunctional use of space. The broader scope also helps to strategically address mobility and environmental issues (Arts, 2007). The approach is therefore regarded to be effective in dealing with the complexity of current infrastructure projects and stimulates the sustainable development of infrastructure (Arts, 2007; Heeres, Tillema et al., 2012b; Struiksma et al., 2008; Struiksma & Tillema, 2009). Its application to current infrastructure development is advocated by many, including the Dutch government and Rijkswaterstaat. However, area-oriented planning is only used in a few frontrunner projects which are still in progress and the use of this approach can therefore regarded to be still in its infancy.

1.2 Motivation of the research

Apart from the societal dynamics, there are also some important developments going on in the area of waterways and especially locks. These developments are the motivation for this specific research. Although it is not always noticed, inland ships transport large volumes of cargo and are for some countries vital for their economy. For instance, in the Netherlands about 80% of the bulk cargo is transported by inland ships and the sector generates a turnover of 1, 52 billion euro (Bureau Voorlichting Binnenvaart, 2013). In Europe, countries such as Germany, France, the Netherlands, and Belgium profit from an extensive waterway network consisting of navigable rivers and canals. To illustrate, the modal split of inland shipping accounts for 36, 7% of the total transported cargo in the Netherlands (Quist, De Jong, & Verheij, 2011). But also in other parts of the world extensive waterway networks exist, for example, 60% of the US farm exports are transported by inland waterway

transportation (Kruse et al., 2011). The future perspective of inland shipping is also promising. For instance, the Port of Rotterdam strives to increase the modal split of inland shipping from 37% today to 45% in 2035 (Port of Rotterdam, 2013). As the emergence of the modern waterway infrastructure approximately occurred in the same period, all countries face an ageing waterway infrastructure. Concerns about ageing locks and disruptions due to failures or emergency repairs are expressed in all these countries. Especially disruptions express the economic importance of the system and also its vulnerability. For instance, due to an accident in Germany the Rhine was blocked for 33 day, resulting in an economic loss of about 50 million euros and due to a broken lock-door the Twente-canal (the Netherlands) was blocked for almost 3 months. The closure of the Mississippi River is expected to be even more devastating; it is estimated that a closure of one day will result in an economical loss of 300 million dollar (CBS News, 2011).

As the majority of the locks are approaching the end of their technical life-time more failures are to be expected making the system more unreliable and causing increasing economic losses. These concerns are also expressed by the United Soybean Board in the United States:

The rapidly deteriorating condition of the nation's lock and dam infrastructure imperils the ability of the waterborne transportation system to provide a service that will enable U.S. agricultural producers to continue to compete (Kruse et al., 2011).

Figure 1: lock breakdowns in the United States (United Soybean Board, 2012)

Their concerns are not unfounded, considering the numbers presented in figure 1. However, these figures are not that strange when realizing that more than 50% of the locks in the United States, and in Germany as well, are over 50 years old (Kruse et al., 2011). Moreover, these locks are not designed for the intensive use they experience nowadays. Shipping transport has increased, both in tonnage as in ship size. The intensified usage has lowered the technical life span of locks due to wear, and renovation or replacement activities have to be executed earlier than expected. Another result is the increased waiting time and congestion associated with the increased use, causing economic losses for the shipping

sector. Beside the more intense usage, ships have continuously grown in size. As navigation locks are rigid structures, the only way to prevent them becoming a bottleneck is to upgrade the lock. Falling behind the developments in the shipping sector can have serious consequences. For example, the port of Amsterdam features a restricted access as the lock that provides entrance to the port cannot facilitate the biggest ships anymore, affecting its competitiveness (Port of Amsterdam, 2008). Both, the more intense usage and the increased shipping size, have contributed to a lowered technical and functional life time of the locks. This is worsened by underinvestment in the past decades. Research on investments in public infrastructure in Germany even showed a 'negative' investment, meaning that the infrastructure was ageing faster due to a lack of maintenance. The Netherlands also faces a maintenance backlog due to underinvestment in waterways (Rijkswaterstaat, 2012a), but the problems seem to be less compared to, for instance, the USA, Germany and France. Rijkswaterstaat currently manages 650 hydraulic structures and as figure 2 shows, many of these objects need to be replaced in the coming decades. The consequence is that huge investments are necessary to keep the system functioning and future proof. These investments are in the Netherlands expected to rise in the next decades up to several 100 million Euro per year (Ministerie van Infrastructuur & Milieu, 2012), and therefore form a great future challenge for Rijkswaterstaat.

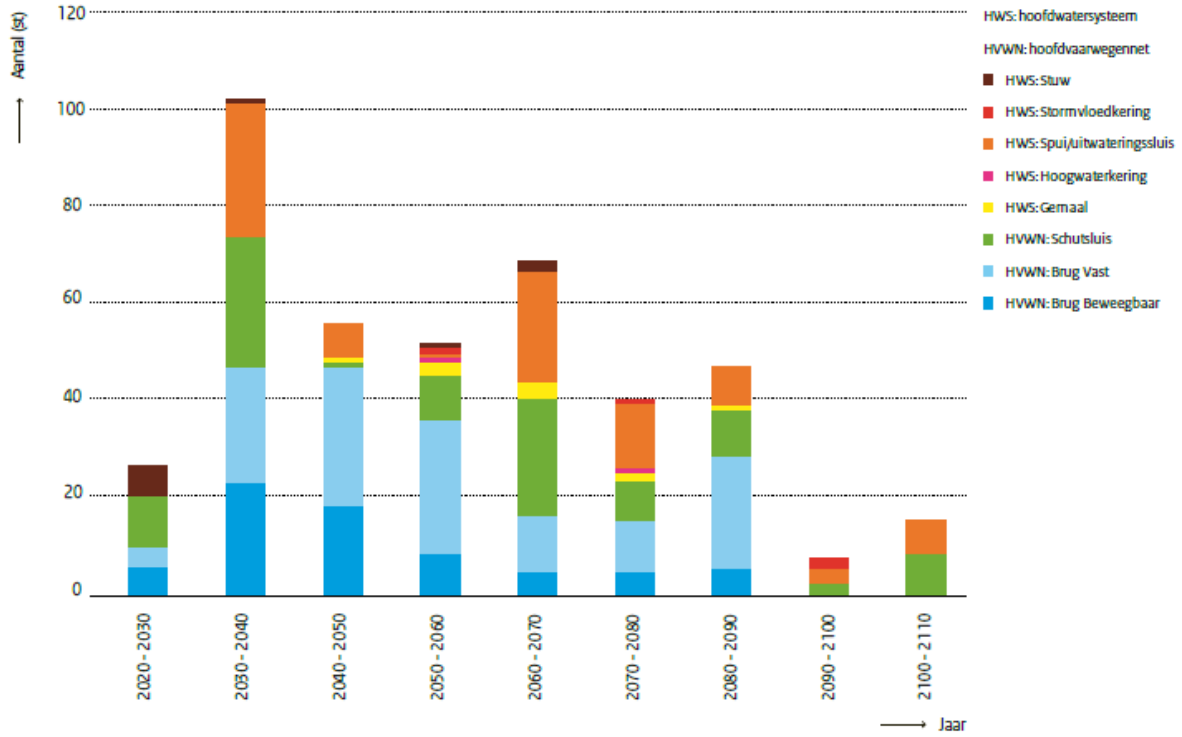


Figure 2: Replacement schedule of hydraulic structures for the coming decades, green bars represent navigation locks (Ministerie van Infrastructuur & Milieu & Ministerie van Economische Zaken, Landbouw en Innovatie, 2012)

However, there are more issues with locks. Locks are a serious obstacle for many aquatic species and to restore their natural migration routes adjustments such as fishways are necessary. Also, as part of the hydrological system, locks can play an important role in the prevention of floods and droughts. During

locking a lock, a vast amount of water is released downstream and adding up those volumes result in a significant impact on the hydrological system. Droughts can be an important constraint to shipping when water levels are too low, as can be witnessed in for example the Mississippi river during dry periods. As climate change puts more pressure on the hydrological system adjustments are necessary, also affecting locks.

Table 1: different stresses on locks and their results

Stresses	Results
Congestion	Economic losses
Bigger ships	Locks become bottlenecks
Climate change	Hydrological system changed
Ecological obstacle	Migration routes aquatic species blocked
More intense usage	Technical life-span decreased

A gigantic problem is slowly emerging and threatening one of the main Dutch transport veins, the inland waterway infrastructure. As locks are ageing quickly due to intense usage, become too small as ship sizes increase and congestion rises, they will form serious bottlenecks if nothing is undertaken. Rijkswaterstaat (Directorate General for Public Works and Water Management), as operator of the main Dutch waterways, therefore faces a huge future challenge. In other countries with important waterway infrastructures, such as Germany and the United States, similar problems are encountered. Upgrading the existing locks demands a huge investment and a strategic approach. It is a disturbing thought, many of these public assets are ageing but the funds to replace or redevelop them are limited (Hijdra, Woltjer, & Arts, 2014). Fortunately, Rijkswaterstaat is well aware of this upcoming problem and is preparing via various ways of research and plan-making. One of these ways is VONK, a program to strategically address the replacement of hydraulic structures. Being at the start of a large investment program for lock renewals, it is interesting to see whether the changed societal demands and planning practices has had an influence on lock projects and in which ways the planning practice can be improved. Has it managed to adopt more integrated planning practices or does it largely sticks to the old-fashioned blue-print type of planning?

1.3 Academic and societal relevance

Infrastructures constitute our physical framework within which our economy and society operate; it is the backbone of the modern society (Hansman, Magee, De Neufville, & Robins, 2006). According to Hansman et al. (2006), improving the effectiveness of our infrastructures is therefore a salient issue. But, we do not have real solid understanding of how the political, economic and technical factors interact, especially in great uncertainties. He calls for more research, especially via comparative analysis, to identify transition barriers and problems (Hansman et al., 2006). This research follows this demand, comparing infrastructures and aiming to identify obstacles towards the development of more area-oriented types of infrastructure. Struiksma (2009) calls for similar research, focusing on complicating factors of infrastructure planning, such as manageability, alignment with policies, finance and

regulation. In addition, Heeres et al. (2012) also calls for ongoing research on area-oriented projects to improve its effectiveness and specifically mentions experiences in cooperations and procedural arrangements as valuable insights that might improve the implementation of area-oriented projects.

When looking at the specific object of study, lock projects, their relevance becomes clear. Dynamics such as the rise of sustainable development and the introduction of more communicative and integrated planning practices have undoubtedly changed the execution of Rijkswaterstaat's main tasks. Concerning the main water system (*hoofdwatersysteem*) the principle of Integrated Water Management was introduced and attention for area-oriented planning arose in the planning of the main road network (*hoofwegennet*) (Van den Brink, 2009). Studies by (Arts & Van Lamoen, 2005; Heeres, Tillema et al., 2012b; Heeres, Tillema, & Arts, 2012a; Stamatiadis, 2005; Struiksma et al., 2008; Struiksma & Tillema, 2009; Tillema, Hamersma, Sussman, & Arts, 2012) on area-oriented planning all concern mainly road infrastructure projects and canals or locks are completely missing in these studies. De Zeeuw (2008) calls for broader application of area-oriented planning, not solely focusing on road projects, however he only mentions railroads and waterways are again completely missing. It seems that the influences of the past decades on the third main task of Rijkswaterstaat, operating the main waterway network (*hoofdvaarwegennet*), has been largely overlooked by scientists.

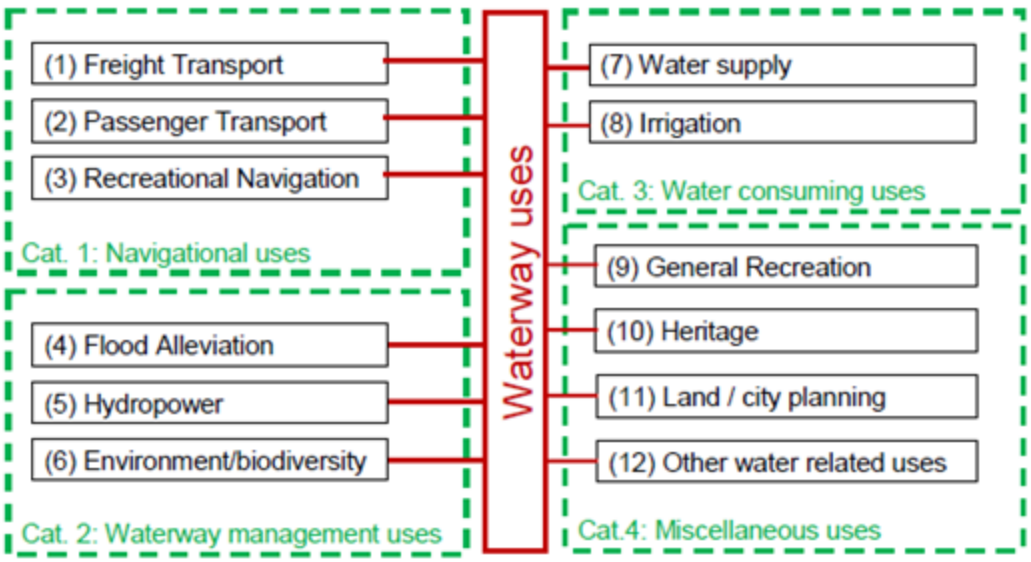


Figure 3: Possible inland waterway uses (PIANC, forthcoming)

The relevance to look at the planning practice of waterways and locks may also not be very apparent. The network has been established long ago and major changes are hardly taking place. Lock projects usually have a limited spatial impact and conflicting interests are less compared to most other infrastructures. For example, compared to road projects environmental issues such as noise and emissions hardly play a role and the canals and locks are appreciated in their landscape, something unthinkable for highways. But one overlooks the potentials of waterway infrastructure. As the different pressures on locks already showed, waterways are host to multiple functions and therefore are already

intrinsically multi-functional. An overview of the multiple functions of waterways is given in figure 3. Combined with a generally positive perception it holds great potential to develop in an integrated way and improving the quality of life. In fact, as water relates to many societal values, functions and interests, it holds a greater potential than other types of infrastructure for value creation through smart combinations (Hijdra et al., 2014) . Furthermore, as the trigger to start with an area-oriented approach is less from a risk and resistance point of view it will be very interesting to see whether Rijkswaterstaat still uses such an approach in order to achieve extra value.

Chapter 2: Research design

2.1 Problem definition and aim of the research

Based on the introduction and the relevance of the research the following problem statement and research objective can be defined:

Problem statement: Current infrastructure planning still features some ongoing difficulties, such as huge conflicting interests and a changing institutional landscape. Furthermore, there is a strong societal demand for sustainable development, delivering infrastructure planning a great challenge. Looking at navigation locks, a great number of the locks in the Netherlands are approaching the end of their technical life-time and a renewal wave is coming up. As this renewal wave will fix the investments in these assets for about the next 100 years it is important to do this in the best possible way. An approach that is ought to deliver integrated and sustainable infrastructure development and effectively deals with complexity is area-oriented planning. It is however unknown to what degree area-oriented planning is applied to current lock projects and which factors hamper of stimulate such an approach.

Research objective: The aim of this research is to explore to what extend area-oriented planning is adopted in lock projects and to discover common factors that hamper the adoption of area-oriented planning. Defining these common factors helps to enrich the knowledge about how to successfully implement area-oriented planning, stimulating the future implementation of integrated and sustainable lock projects.

2.2 Research Questions and Research Demarcation

Answering the following research question is the main goal of this thesis:

Is the recent observed shift towards an area-oriented approach in infrastructure planning embedded in the policy planning and implementation of locks projects?

In order to answer this question the current planning practice of locks is analysed by studying three currently running lock projects of Rijkswaterstaat. Several sub-questions are formulated that contribute to answering the main research question. These sub-questions are partly based on theoretical assumptions.

1. *To what level are the case study lock projects integrated?*
2. *In which ways is institutional capacity used to foster the project's performance?*
3. *Which common factors can be distinguished that hamper the adoption of area-oriented practices?*

The first two sub questions are in line with the two different dimensions of area-oriented planning, as distinguished by Heeres et al. (2012). The first sub question deals with the spatial-functional dimension and the second sub question deals with the organizational arrangements. As will be explained in the theoretical framework, area-oriented planning consists of collaborative processes, which are fostered by

a governance style focussed on institutional capacity-building. Therefore the ways of institutional capacity-building are considered to explore to what extent a governance style is adopted that fosters area-oriented planning. Exploring the current planning practice is the first step, improving it and stimulating the integrated and sustainable development of infrastructure is the next step. Therefore, common factors are sought that hamper the adoption of area-oriented planning. Defining these common factors will help to improve future planning practices.

Demarcation of the research field

Specific object of research are locks, which form a certain niche in the domain of infrastructure. As there is little literature available on the planning of locks, it is inevitable to rely on literature that concerns infrastructure in general or which is based on other types of infrastructure. Since this cross-fertilization can result in valuable insights for infrastructure in general or for specific other niches this might not be a problem. As three current lock projects are the object of study it is important to note that every infrastructure project features its very own context and timeframe, which makes it impossible to copy and apply a successful approach to another project. However, despite its unique context it is possible to distinguish common factors (Hansman et al., 2006). So, by combining the results of the three case studies common themes emerge, which eventually present a reliable picture of the current planning practice. All projects are analysed over their complete time-span but the focus is on the past few years as this research also focuses on the current societal dynamics. Furthermore, none of the examined projects are currently finished. However, all projects are in such an advanced stadium that they offer a reliable impression of the project´s outcomes, but the final outcomes can indeed still change over the coming years. An interesting aspect is the potential value of area-oriented planning to lock projects. The approach is mainly used in highway-projects, which obviously have a far greater spatial impact. But, is it also suitable for lock projects, or does it makes lock projects unnecessarily complex? It is not the aim of this research to exactly judge this, but the experiences from the case studies on the motivation for such an approach and the potential of value of it will be described in the discussion in chapter 7.

2.3 Research Framework and Outline

Figure 4 gives a schematic overview of the research. In the following chapter we first consider the theory behind this research. Theoretical developments and several concepts are considered and the underlying theoretical framework is presented that forms the basis of this research. Next, in chapter 4 the methodology and methods of this research are explained. After the methodology and methods we continue with the results. In chapter 5 the case studies are considered. Per case study the Omgevingswijzer is presented and the results on the five aspects of institutional capacity are given. In chapter 6 the overall results are considered, summing up the case study results and confronting it with the literature. In chapter 7 the conclusion is presented and this thesis finishes with the recommendations in chapter 8.

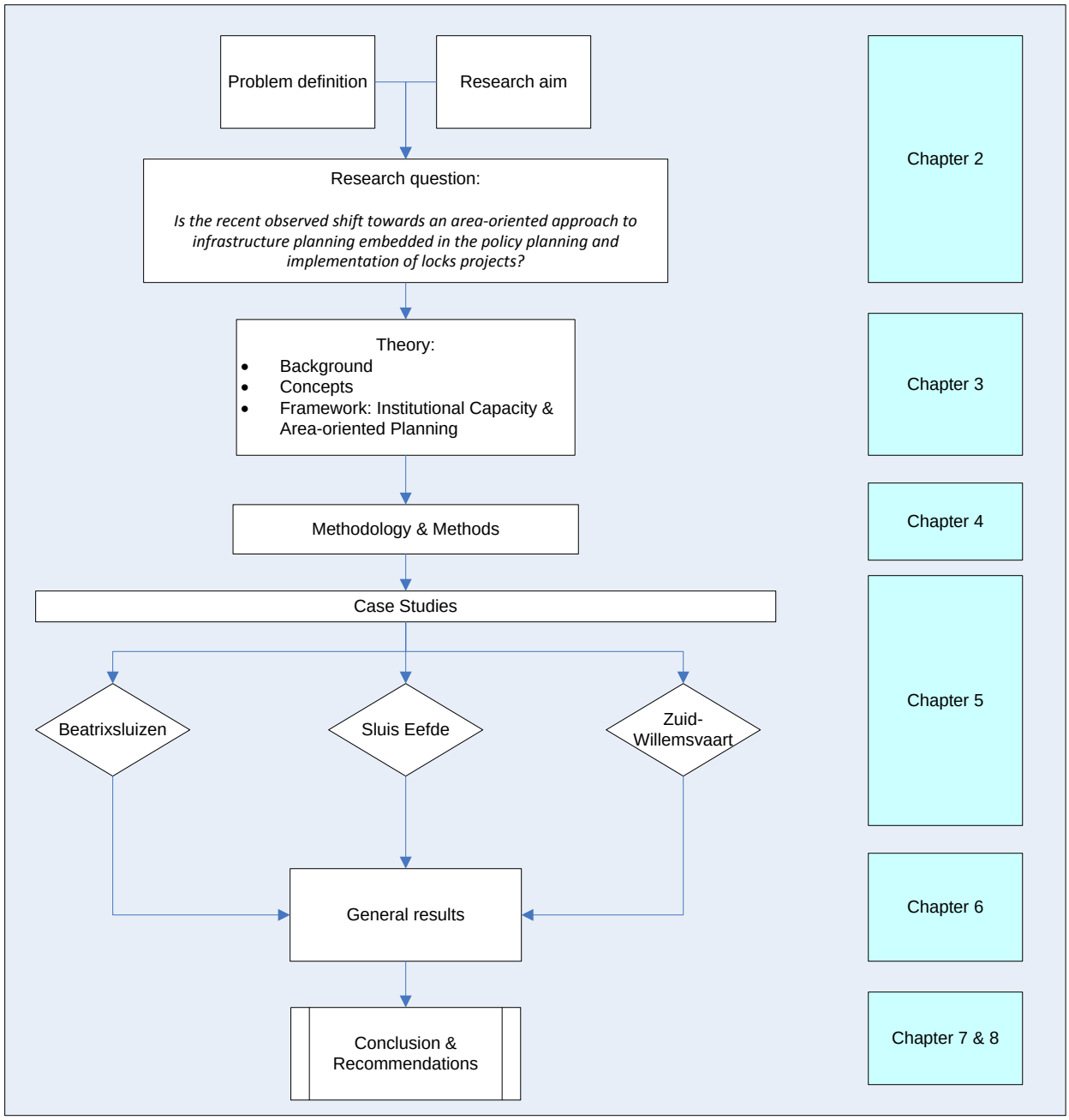


Figure 4: Research Framework

Chapter 3: Theory

This chapter elaborates upon the underlying theory of the research. Planning theory has gone through some important changes in the past decades which are shortly described in the first section. Several concepts emerged and their contribution to planning theory is examined in the second section. After the theoretical background and the concepts we turn to the theoretical framework which provides the fundaments of this research. The theory behind area-oriented planning is explained first, including the emergence of the approach, similar developments in other fields, and experiences with the approach based on literature and the international perspective. In the second part of the framework the theory of institutional capacity building is worked out, as well as its relevance to area-oriented planning.

3.1 Theoretical background

3.1.1. Modernism

The developments and pressures that Rijkswaterstaat experienced, as described in the introduction, was not something unique, it was a phenomenon that was broadly witnessed in Europe and the USA (Berke, 2002; Healey, 1998). After the Second World War the development of the Welfare State focussed on the general provision of public goods and infrastructure, following a technical-rational approach (De Roo & Silva, 2012). It emphasized sectoral division, a clear division between public provision and private action and featured hierarchical, top-down forms of organisation (Healey, 1998). The classic view of planning was that the government should plan for and exercise control over private land use and building practices, as well as guide the location of infrastructure (Berke, 2002). Planners tried to contribute to the progress of society and aimed to create a desired physical environment, based on certainty and the ability to predict and control our future (De Roo & Silva, 2012).

However, as the focusing events showed, this technocratic discourse was destabilised. Many places experienced massive social upheavals due to concentrated poverty, racism, downgraded inner cities and pollution (Berke, 2002). The efficacy of the classic view of planning was questioned which led to a loss of faith in the planning expertise. In reaction, several other theoretical approaches appeared. Systems Theory and Procedural Planning Theory emerged and plead for more rational decision-making. Many planners considered themselves more rational than others, especially politicians. But this touches upon the biggest criticism of rational planning, as the often highly technical studies were conducted in a political vacuum, their influence on decision-making was limited. Following the demand for a more participatory democracy, the new field of Advocacy planning (Davidoff, 1965) was born. This field promotes interests that were often shut out and helps to empower the underrepresented through extensive community participation. The rise of the public voice led to the amendment of many laws and public participation was given a stronger legal standing in many policy arenas (Berke, 2002). However, participation moved away from the initial idea that individuals collectively act for the common good. The empowerment of many special interests and the power of each interest to stop created a gridlock. Local groups increasingly became reactive and opposition oriented while public policy remained dominated by the strong and powerful. This is exactly the criticism of Critical Theory. Planning helps capitalism to sustain and gives people the impression that it is acting on their behalf through public

participation, while it merely is a façade for the powerful interests (Allmendinger, 2009). As the planning issues become more complex and the gap between theory and practice is growing, planning theory and practice are steering towards a paradigm shift.

The above described planning approaches can be labelled modernist and the notion that planning itself is a product of modernity is widely accepted (Allmendinger, 2009). Modernity is closely associated with the Enlightenment, which aimed at liberty through knowledge. Modernity assumes that there are absolute truths and it is possible to plan rationally for ideal social order (Harvey, 1989). However, modernism has received a lot of criticism, which led to the rise of post-modernist theories with the result that planning finds itself now in a post-modern period (Allmendinger, 2009). The biggest critique of modernism is the idea of instrumental rationality. According to instrumental rationality, everything that can be is transformed into mathematical abstractions while anything that cannot is ignored or suppressed (Allmendinger, 2009). This leaves no room for intuition and open, reasoned discussion. According to Healey (1993), this scientific rationalism has crowded out all other ways of knowing and being.

According to post-structivist views the current complex and non-linear dynamics cannot be captured in mathematical abstractions. An objective interpretation of the present is not possible as someone's view is inevitable influenced by cultural and social values. Knowledge is socially constructed and the relativist approach regards every meaning to be equally important and truthful. Cities and urban areas cannot be understood as integrated unities with straightforward dynamics: they are complex systems created by dynamic networks of actors who invest in projects and give meaning to places (Healey, 2007). Hence, communicative forms of planning offer a progressive way forward. Planning is an interactive and interpretive process in which scientific knowledge is but one form of knowledge. By bringing these types of knowledge together, an acceptable level of mutual understanding can be achieved, while acknowledging the fact that it cannot be fully understood. All discourses deserve respect and attention and instead of focussing on bargaining, conflicting views are discussed in order to reach understanding and create new ones (Healey, 1993). Planning had to change to be more sensitive to discourse and power relations and here is where post-positivist theories emerged.

3.1.2. Collaborative Planning

In a reaction to the failures of the modernist approaches, new and post-positivist methods that admit the complexity of current society and stimulate the involvement of various stakeholders emerged. Through communication and discussion shared perceptions about problems and solutions would lead to more desirable outcomes. Different 'branches' of post-positivist planning theories emerged, of which the communicative or collaborative approach is the most influential branch (Allmendinger, 2009; Healey, 1998; Healey, 2003). The approach is based upon work of Michel Foucault, Anthony Giddens and especially Jörgen Habermas, a critical theorist. Instead of rejecting modernism, it tries to reconstruct it, reclaiming rationality form a narrow scientific/instrumental focus, which has dominated the non-'scientific' world and rediscover what Habermas terms 'communicative rationality'. Objectivity is based on agreement between individuals, reached through open en free discourse. Foucault's work deals with

language and meaning in power relations and especially how they can hide existing power relations. Not only is discourse related to power, it is also a way in which power is applied. Language is a way of maintaining or developing power relations. But is has the potential to expose such relations as well. Discourse analysis has entered the field of planning in the last decades, e.g. Hajer's work on environmental politics (2005), and has thrown a new light on power relations.

Healey also draws on the structuration theory of Giddens and its development into a social-constructivist view on institutional dynamics. Through the interaction between structuring 'forces' and the active creative force of human agency, social order is created and continually emergent (Healey, 2003). According to Gidden's structuration theory, structure and agency are two sides of the same coin instead of two coins and hereby focuses on the interrelationship between both (Allmendinger, 2009). Structure can enable behavior, but behavior can potentially influence and reconstitute structure. There is a mutually dependence between structure and agency and their link is obvious: 'social structures are both constituted by human agency, and yet at the same time are the very medium of this constitution (Giddens, 1984).

These three broad streams of thought are brought together in Healey's collaborative planning theory. According to Healey, urban planning is an '*active social process through which the governance power to regulate and to distribute resources which affect the qualities of places is reshaped by a collaborative reflection on the ideas, systems of meaning, and ways of acting which have been driving place making in particular places in the past, and a mobilisation of transformative potential to make a difference to place making in the future'* (Healey, 1998).

Planning processes are social processes in which social meanings are constructed through language and discourse and in which activities are given legitimacy. People can influence policy development through their meanings, values and ways of acting, which are established in a social context and through interaction. Despite that the influence of an individual is limited and power relations are locked in existing institutional relations, the parameters of these constrains are not fixed. They are dynamic and continuously being moulded through interaction with the 'flow of social relations' (Healey, 1998), emphasis added). Following a collaborative approach enables the creation of new discourses about the quality of places and policy development that involves broad and inclusive stakeholder involvement, beyond the existing power elite, that appreciates different forms of local knowledge. It helps to build rich social networks as a resource of institutional capital through which new initiatives can be implemented quickly, smoothly and legitimately. Therefore the planner's task shifts from 'building places' to fostering the institutional capacity in territorial political communities for ongoing 'place making' activities (Healey, 1998).

3.2 Theoretical Concepts

Before going into the theoretical framework, several theoretical concepts are elaborated that play a significant role in the theoretical framework. First of all, participation is considered and which role it plays in contemporary planning. Next, complexity theory has recently received much attention in the planning profession and sheds a new light on complex issues and uncertainty. Lastly, the rise of sustainability is examined and its influence on infrastructure planning.

3.2.1. Participation

Much of the research on collaborative planning is focussed on the inclusive involvement of stakeholders and participation (Woltjer, 2002). This 'participatory planning' follows a philosophy about decision making that involves joint problem defining and plan-making of which the outcomes are binding to some degree. This so-called 'communicative turn' shifts the emphasis on representation towards direct involvement (Woltjer, 2002). Instead of representatives of the absent, the absentees themselves are now involved. One of the best-know typologies of citizen participation is the 'ladder of participation' of Sherry Arnstein (1969).

Non-participation	Manipulation
	Therapy
Symbolic participation	Informing
	Consulting
	Satisfy
Real participation	Collaboration
	Delegation of responsibilities
	Self-determination

Table 2: Degrees of participation (De Roo & Voogd, 2004)

Arnstein made a distinction between symbolic participation, which involves informing and written objections, and real participation which involves cooperation and delegated power (see table 1). Only through real participation citizens get the opportunity to discuss plans and exert influence on the decision making. Woltjer (2002) has written about the function of participation and argues that it is relevant if it enhances the quality of planning. He makes a difference between the normative and instrumental function of participation. The normative function focuses on the promotion of interest and the democratic legitimacy of decision-making, whereas the instrumental function concerns gaining control and public support and saving time and money through preventing objections and appeal. In the Netherlands, planners mostly take an instrumental position and in most projects participation aims at reaching win-win results and gaining support and acceptance. However, this does not mean there is a general consensus on the use of participation. In reality objectives of participation vary and there is no clarity on what successful participation is and what its main functions would be (Woltjer, 2002).

In the Netherlands participation is well institutionalized and organized. Major infrastructure projects have to follow the Infrastructure Act which provides an integrated procedure. For instance, it prescribes an Environmental Impact Assessment and inter-agency consultation and public involvement. This high degree of organisation and collective action is even regarded as typically Dutch (Woltjer, 2002). Planners spend a considerable amount of their time on public consultation and stakeholder management. However, according to Voogd & Woltjer (1999), participation in the Netherlands does not involve a truly open-planning process or collective decision-making and it shows signs of 'tokism' or symbolic participation. Participation is used selectively, featuring dialogue, negations and discussion only on specific aspects of the project and citizens are not responsible for decision making (Woltjer, 2002).

On the other hand, authors warn the sole reliance on open planning procedures as selective participation (e.g. only opponents raise their voice) or the narrow promotion of interests (e.g. social dilemmas[1]) deteriorate the results. Participation has to be used with sensitivity for various contexts. It is possible to limit discussion and negotiations only to certain aspects or activities within the planning process (Woltjer, 2005) or to only involve 'purposeful actors' (Teisman, 2000), actors who can help to realize a project by bringing power, money, knowledge or manpower.

3.2.2. Complexity & Uncertainty

Participation should be used with sensitivity for the context. But what determines this context? This is largely influenced by its complexity and uncertainty. In recent planning theory there has been given much attention to the idea of complexity (De Roo & Silva, 2012; Nooteboom, 2006; Struiksma et al., 2008; Teisman, 2000). It is generally acknowledged that the complexity of planning issues has grown over the past decades. For various reasons such as: the scarcity of space, the huge interests involved, the changing role of governments and the introduction of (European) environmental legislation (Arts, 2007). According to De Zeeuw (2007) complexity is even inherent to area-development practices.

Planning issues are nowadays seen as open, network systems in which participants share their perceptions and interact, instead of a closed system with direct causal relationships. Features of complex systems are for example adaptation, self-organisation and co-evolution. Planning issues can vary between complex and very complex and this degree of complexity makes it possible to attach approaches to an issue (De Roo & Silva, 2012). The introduction of complexity in the field of planning has eroded away the conception of a reality that can be made and managed and therefore follows a post-modern view. However, as a solely technical view of reality would be unrealistic, a solely post-modern view would leave us nothing but scepticism (De Roo & Silva, 2012). Instead of seeing it as black

[1] Social dillemma: individuals may act very rational from their own perspective in pursuit of their self-interest, but this behaviour may be irrational from a collective perspective (Voogd & Woltjer, 1999). The promotion of self-interest prevails over the collective interest in cases of social dilemmas. Examples are environmental polices or the phenomenon of NIMBY.

or white, there is a whole spectrum with different shades of grey between the two views and the bulk of the planning issues are in between the two with varying degrees of complexity and certainty.

What can we learn from the idea of complexity? It makes us aware of the existence of multiple and different perceptions and as a result compatible goals are not obvious (Teisman, 2012). Arts (2007) points at the interconnectivity of system elements, influencing each other through interaction and hereby causing changes to take place in a non-linear way. In order to deal with it, both competition and co-operation are relevant. Governments are expected to promote the public interest and are therefore potential partners of each other (cooperation). But, when they start to absolutise the specific part of the public interest for which they are responsible, they start competing. This fragmentation needs to be managed according to Teisman (2005) by focussing on 'co-opetition. This differs from coordination as it focuses on cooperation and variety instead of uniformity (Struiksma et al., 2008).

Dealing with complexity inherently calls for dealing with uncertainty, especially since planning is a future oriented activity. Christensen (1985) points at the planner's task to recognize and address uncertainty. Issues vary in certainty about means and ends, which determines the approach to follow. A situation in which people agree on the goal to achieve and the way to achieve it demands a technical rational approach as the degree of certainty is high. On the other hand, in a situation in which the means and ends are both not clear, a communicative rational approach is needed to come to shared perceptions about the means and ends. One needs to move from the 'chaos' of box D, see Figure 5, towards box C or B where at least the means or ends are clear. The other two possible scenarios either result in a learning process as the means are not known but the goal is or in a bargaining process when there is no agreement on the goal to achieve (Christensen, 1985).

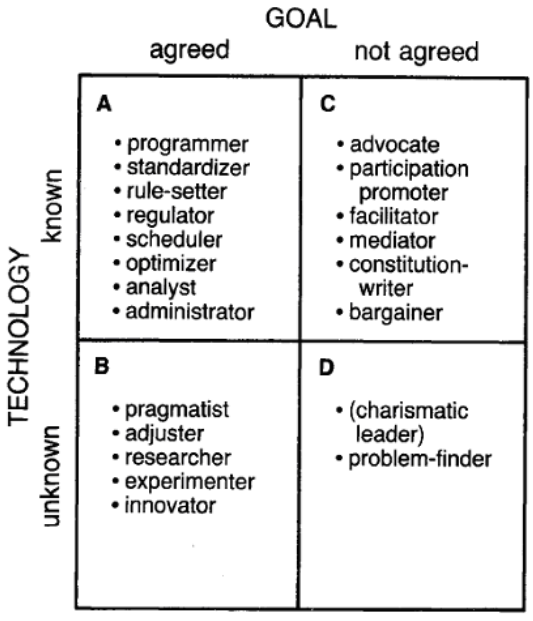


Figure 5: Planning roles categorized by planning condition (Christensen, 1985)

As planners in the Netherlands usually find themselves with fixed goals (e.g. road improvement, lock extension), it is not surprising that they show a pragmatic reaction to new and not prescribed approaches such as participatory planning (Woltjer, 2002).

Planners and decision-makers show different responses when faced with uncertainty and complexity. Teisman (2005) distinguishes three undesirable but common approaches. They either try to fix the content, which makes little sense when dealing with long processes. Or, they try to fix the procedures, but this hampers partnership and flexibility. Or, thirdly, they separate the responsibilities, which hampers the creation of extra value as it is difficult to combine knowledge, qualities and insights. The approaches show similarities with the reaction of 'hedging' against risks. By 'hedging', it is meant that one tries to reduce risks by gathering as much information as possible and taking measures for the containment of risks (Struiksma et al., 2008). The Infrastructure Act in the Netherlands is an example of such a hedging strategy. It is a powerful instrument which demands a high level of detail to overcome technical, financial, administrative, and juridical uncertainties. A strategy of hedging which in practice has resulted in a juridification of planning (Arts & Faith-Ell, 2012). Hedging is not the optimal path to follow, especially when dealing with complex issues an approach of both hedging and flexing is needed (Struiksma et al., 2008). Through 'flexing', the risks are managed by a process approach which involves early warning and adaptive strategies. In order to master the complex planning situation, an approach of flexing is needed that involves more process-elements (Arts & Faith-Ell, 2012).

3.2.3. Sustainable Development

A strong example of social dynamics in the past decades is the rise of sustainable development. Since the Brundtland report 'Our Common Future' of the World Commission on Environment and Development (WCED) was published in 1987, attention for sustainable development has been growing ever since and has developed into an explicit societal demand. According to the Brundtland (1987) definition, sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Numerous other definitions have followed, but as sustainable development is merely a way of thinking, it does not present a way of acting. Sustainability is an empty term of itself. But, this brings opportunities. By collaboratively defining the term a common and shared perception is formed of what sustainability really is. It works the same way for sustainable planning. Sustainability is increasingly being used to guide planning but its implementation is not immediately apparent (Berke, 2002). Berke sees great potential for sustainable planning, as 'we have lost ourselves in the process with no sense of common good or purpose anymore'. Davoudi puts it very striking:

In search of a new "vision" for planning . . . many commentators believe that there is a need for a new vision, one which can "reach out to society as a whole, addressing its wants, needs and insecurities" . . . a "vision to rank with those of Ebenezer Howard a century ago" . . . There is a consensus that such a vision can now emerge from what has come to be called sustainability (Davoudi, 2000).

Sustainable development can act as an overarching goal that moves beyond the promotion of narrow special interests through local participation and towards a more holistic and inclusive view. Berke (2002)

sees here a special role for the planner to promote sustainable development. The planner's task is to translate theory into practice, which requires a holistic and integrative view in order to deal with the complexity of the task. Definitions of sustainability are often desirably local, partial and particular, following the qualitative interpretation of sustainability to a community (Magee et al., 2013). In such a way, bottom-up initiatives and actions can be connected to global issues. In line with this perspective is the idea of social sustainability.

Social sustainability is a concept that provides a much richer and less reductive, less skewed view than most mainstream approaches (UN Global Compact Cities Programme, 2013). Social sustainability emergences from critiques on existing concepts of sustainability, such as the well-known triple-bottom line of Elkington (1997). In this corporate-oriented approach the social aspect is a secondary aspect and the economic aspect sometimes elevated as a master category (Magee et al., 2013). Concurrently, the environment is treated as an externality or background feature. According to social sustainability, if practices and meanings of human engagement project an ongoing life-world of natural and social flourishing, then sustainability is a social phenomenon long before it is an economic or ecological phenomenon (UN Global Compact Cities Programme, 2013). Instead of framing sustainability as an economic environmental condition with a few social extras attached to it, sustainability is framed as a social condition (Magee et al., 2013). It is possible to divide 'the social' into four dimensions; dimensions of social life understood in the broadest possible sense (UN Global Compact Cities Programme, 2013). In this way the economic aspect becomes a social dimension and the environmental aspect is replaced by the less abstract dimension of ecology. Two other dimensions exist, the political and cultural, recognizing the broad conceptual histories of those terms in relation to power and meaning (Magee et al., 2013). The different dimensions and their sub dimensions are shown in figure 6, representing the so-called 'circles of sustainability', an assessment method currently used by the UN Global Compact Cities Programme. Social sustainability is thus not a category among the others and can therefore not be scarified for the sake of economic or environmental sustainability (Magee et al., 2013). The notion of social sustainability has some important benefits, according to Magee et al. (2013). First, it is better applicable to urban communities since they exist in a much broader social matrix than corporations. Secondly, by involving the dimensions of culture, it allows communities to link their actions to values and meanings. Thirdly, issues dealing with one of the dimensions are brought to the fore and tensions between them are expressed, stimulation a proper management according to their temporal or spatial dimensions (Magee et al., 2013).

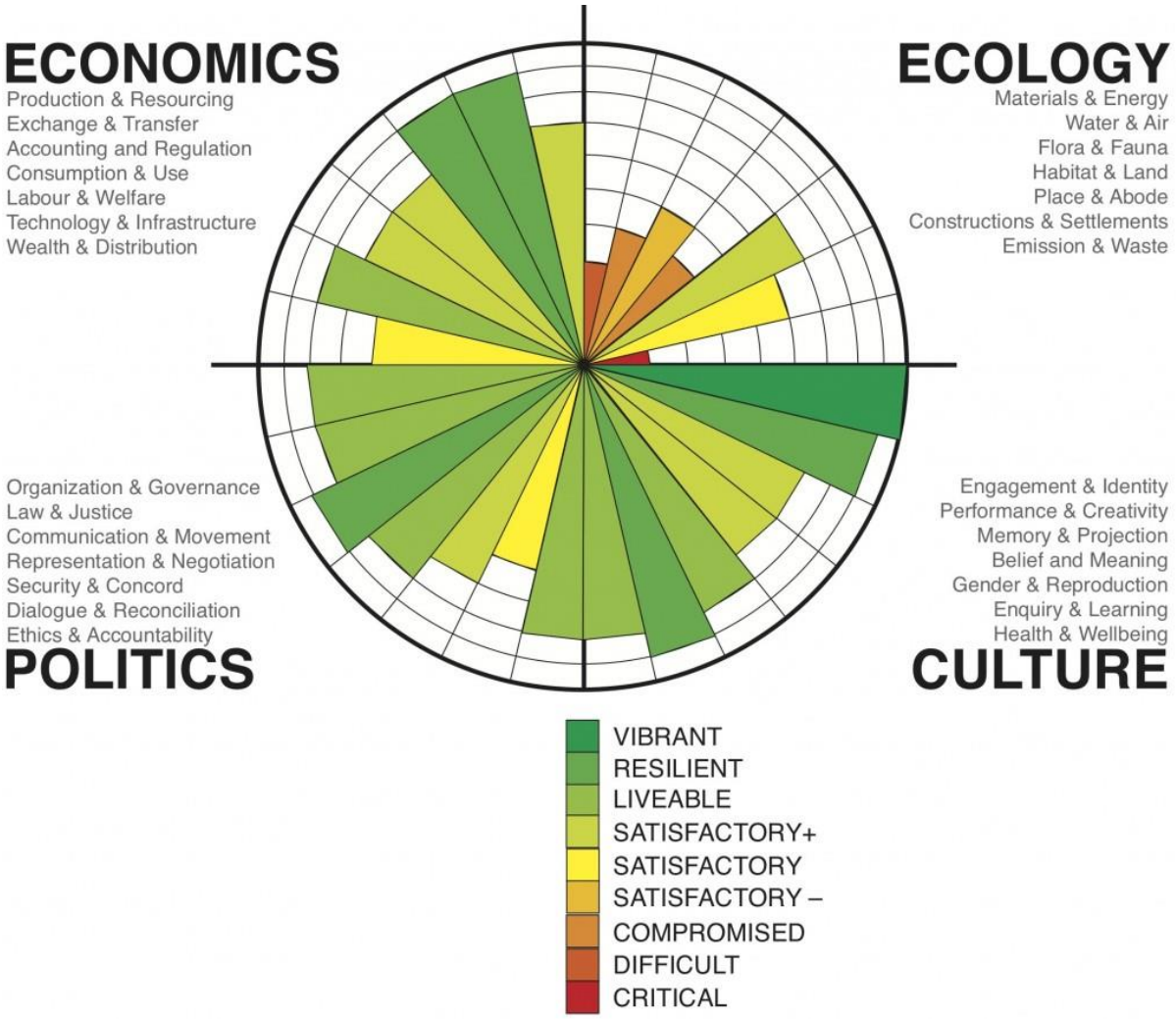


Figure 6: Circles of Sustainability (UN Global Compact Cities Programme, 2013)

In order to come to social sustainability, an engaged approach is necessary, as is argued by Magee et al. (2013). It involves a process of expert and community engagement, in which local actions are linked to global concerns. Through community consultation their needs and capabilities are connected to theoretical ideals of sustainability. Furthermore, engagement is also needed for communicative action, expressing the goals and progress, and creating support (Magee et al., 2013). Looking at the object of study, the implementation of infrastructure, Polk (2011) and Nooteboom (2006) acknowledge that a collaborative approach is needed to come to sustainable infrastructure development. There is a need for processes and institutions that can facilitate cross-sector and multilevel governance and learning to better address long-term protection of social-ecological systems. Collaborative planning can be helpful as it focuses on the promotion of different interest and boundary-bridging processes, especially between private and public actors, and where joint problem-solving takes place through dialogue and collaboration. Others (Beukers & Heeres, 2012; Polk, 2011; Voogd & Woltjer, 1999) call for a more integrated approach with respect to space, time and actors to come to sustainability in infrastructure

planning. Sustainability in infrastructure demands a much broader vision than just economical profits vs. negative impacts on the environment and an integrated approach is clearly necessary (Arts, 2007; Polk, 2011). An approach that is both integrated and to some extent engaged is area-oriented planning. It is indicated as the practical implementation of sustainable infrastructure development by several authors (Lenferink, Tillema, & Arts, 2010; Arts, 2007; Heeres et al., 2012a; Heeres, Tillema et al., 2012b; Lenferink, Tillema, & Arts, 2011; Struiksma et al., 2008). The theory of area-oriented planning is described in theoretical framework, which follows after some consideration on sustainability in current infrastructure planning practice.

Looking at the current infrastructure planning, economical motifs are usually dominant. Other elements such as nature, environment and the quality of places are often brought to the play in a later stadium and focuses in most cases on mitigation measures (Beukers & Heeres, 2012). The current set of instruments that is aimed to support decision-making is in the first place economical oriented and in which non-economic aspects are often even impeding. Also, current institutions for policy-making, planning and implementation are more suited to provide solutions for social and environmental problems that are immediate, local and divisible into specific policy areas (Polk, 2011). Voogd & Woltjer (1999) therefore point at the risk of giving too little attention to environmental and natural values and the interests of future generations and the emergence of social dilemmas. Despite reaching consensus mainly local and contemporary interests are promoted while these are generally speaking undesired and therefore causing a so-called social dilemma. In such situations, the special protection of weak interest may be necessary and a solely communicative approach may prove insufficient (Voogd & Woltjer, 1999). Furthermore, in the Dutch planning there is a growing emphasis on project planning as stakeholders and interest can be better defined and managed. This might however lead to fragmentation as interrelationships between projects are neglected, especially when an overarching strategic framework is missing or when there is no shared interest between the projects (Voogd & Woltjer, 1999). According to Teisman (2012), sustainable development currently only takes place when a strong combination exists between policy urgencies, such as mobility, climate, energy and housing issues, and regional/local urgencies, such as employment, social tension and degradation.

3.3 Theoretical Framework

In this section the theoretical framework is presented upon which this research is grounded. First, the theories of area-oriented planning and institutional capacity-building are elaborated, since they make up the theoretical framework. After that the theoretical framework is presented, linking both theories.

3.3.1. Area-oriented Development

In order to cope with the current infrastructure problems a paradigm shift is needed (Struiksma et al., 2008). More pushing and pulling will only result in more resistance as the projects are reasoned from a too limited scope. To come to an effective and sustainable infrastructure development a broad scope

with respect to aspects of time, space and actors is essential (Arts, 2007). In this respect area-oriented planning of infrastructure offers a way out (Arts, 2007; Heeres et al., 2012a; Struiksma & Tillema, 2009).

Development towards integrated practices

The idea of area-oriented, integrated or context-sensitive types of planning[2] is not something entirely new. It is the result of ongoing changes in infrastructure and urban planning, triggered by economical and societal pressures. It is part of a word-wide phenomenon of policy integration, as described in Stead & Meijers (2009). When we consider infrastructure planning, we can see a gradual shift from routing towards integration and compensation and possibly towards total design (Struiksma & Tillema, 2009), see figure 7. Due to environmental pressures attention was given to the route or position of infrastructure in order to limit the damage. With the realisation of infrastructure one should take into account the scale of the landscape and ecosystem and should take distance from vulnerable natural areas (Ministerie van Verkeer en Waterstaat, 1979). With growing tensions between the quality of the environment and the profits and necessity of infrastructure the attention shifted towards a broader alignment with the surrounding area. The Second Structure scheme of Traffic and Transport (SVV II, 1990) introduced mitigation measures such as wildlife overpasses and noise barriers and the Structure scheme Green Space (1993) introduced the compensation principle to restore natural values. However, the separation of functions and the protection-oriented nature of infrastructure planning resulted in cost and time overruns. A development oriented approach in the form of area-oriented infrastructure planning would therefore be a better approach according to the Council of Traffic and Water Management (1998). One should move towards 'total design' and the redevelopment of areas (Struiksma & Tillema, 2009).

Early types of area-oriented planning can be found in other policy fields, especially in environmental policies. An example is the so-called ROM-policy, *Ruimtelijke Ordening en Milieu* (Urban Planning and Environment) in the 90's, integrating environmental issues in spatial planning (Struiksma et al., 2008). A follow-up was the 'Stad en Milieu' (City and Environment) project between 1997 and 2003. During this experimental project municipalities took an integrated and area-oriented approach to urban (re)development projects, striving for a higher quality of places and effective use of space. In these projects municipalities were allowed to deviate from environmental laws under certain conditions. Other examples can be found in policies concerning water quality (E.U. Water Framework Directive) and nature policies. Water Management deals with it too, already in the 70's a participatory approach was adopted (Van der Brugge, Rotmans, & Loorbach, 2005) and especially in the last two decades water management has changed a lot and currently features a more holistic understanding, beyond technological fixes (Jacobs & Buijs, 2011).

[2] Area-oriented development is chosen as the leading term for these similar approaches since the focus of this research is on infrastructure planning. When specifically mentioning area-development it refers to the urban planning variant, without infrastructure development at its core.

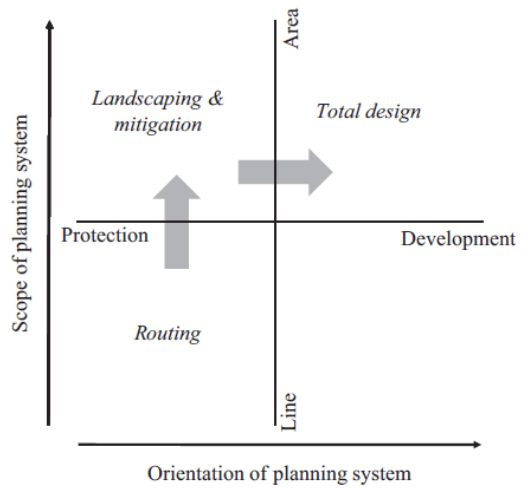


Figure 7: development towards an area-oriented approach (Struiksma & Tillema, 2009)

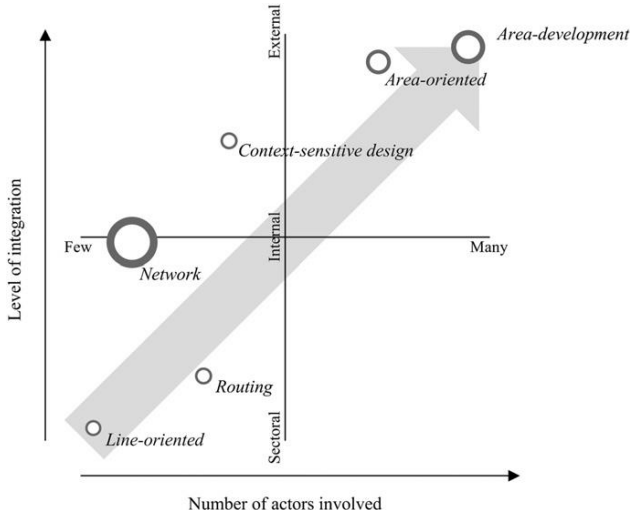


Figure 8: Relationship between different approaches to infrastructure planning and the level of integration, actor involvement and spatial dimensions. The size of the dots reflects the spatial focus (small: local focus; larger: regional focus) (Heeres. et al., 2012).

In the practice of urban planning we can see similar changes towards more integrated planning. It is generally agreed that the traditional way of 'consent planning' is not sufficient anymore. Government bodies have developed themselves into 'hindrance powers', for example through complex regulations. There is a need for a government that, together with civil society organisations, actively guides urban planning. A popular term for such a way of working is development planning (Dammers & van der Spek, 2004). Instead of zoning and protecting it follows a proactive approach with a focus on development, stimulation and cooperation (Roo, 2003). It is an area-oriented approach that anticipates to societal dynamics, connects the different spatial needs and relies on stakeholder involvement (Dammers & van der Spek, 2004). Area-development is the practical execution of development planning and is the counterpart of area-oriented infrastructure planning. In the past decennium a boom of area-development projects can be witnessed (Janssen-Jansen, 2010). The experiences are variable, as is elaborated upon later in this chapter, and large-scale area development seems currently to be a bridge too far.

Policy integration has become a widespread tradition in Dutch planning since the 1990s but until recently transport and traffic has remained a solitary policy sector, mainly due to its own sources of funding (De Roo, Schwartz, Van der Wal, & Oosterhoff, 2001). Infrastructure has a large and structuring influence on the surrounding area through negative environmental effects and spatial-economic

developments (Arts, 2007). One of the reasons for the problems with infrastructure planning is the bad coordination with spatial developments. Despite mitigation and compensation efforts it remained largely infrastructure-oriented, while spatial planning paid little attention to mobility effects of developments (Heeres, Tillema et al., 2012b). Therefore, a more integrated consideration is needed between infrastructure on one hand and spatial and social-economic developments on the other hand (Arts, 2007). These parallel developments in both planning fields of more attention for the surrounding area in infrastructure planning and mobility in urban planning offers a perspective towards a type of planning in which both fields are fit to each other. However, in infrastructure planning a paradigm shift has not yet taken place (Struiksma et al., 2008). Although the advice 'Ambities Bundelen' (Joining Ambitions) of the Council for Infrastructure and Water Management in 1998 already extensively deals with area-oriented approaches, it is still far from being a common practice in infrastructure planning. Careful integration with respect to landscape and environment receives a lot attention but the infrastructure usually is not designed from the perspective of the surrounding area (TMC (Tracé/m.e.r.-centrum), 2001).

Definition of area-oriented planning

Area-oriented planning focuses both on internal integration and external integration of infrastructure. It combines transport objectives with future developments in other spatial policy sectors, stimulation cross-sector integration (Heeres, Tillema et al., 2012b). According to Heeres et al. (2012) the aim of area-oriented planning is *'to incorporate the needs, demands and opportunities offered by the surrounding area (or 'places') into infrastructure planning in order to solve complex transport issues by searching for solutions within the broader spatial system.'*

This means that infrastructure planning is not seen as an object-oriented issue but as an area-issue which aims at the (re)development of an area and in which infrastructure is the bearing development (Arts, 2007). As a result, the project moves from mitigating and compensating its negative effects towards improving the quality of life in the area. Furthermore, as it follows a collaborative approach it fosters stakeholders to make a difference to the quality of their places (Healey, 1998). According to Arts (2007) the essence of area-oriented planning is the fact that the development is not centered on the infrastructural object but instead on the whole area. It requires a way of reasoning and designing from 'outside in' instead of 'inside out' (see Figure 9) in which the needs and opportunities of an area are determinative for the infrastructure design. The area-transcending interest of the infrastructure may not be an argument to ignore these local demands and opportunities (Zeeuw & Licher, 2008). With an area-oriented approach as many as possible relevant aspects (economic, environment, spatial, nature etc.) of a project are examined in an early stage with the many involved stakeholders and with a formal preference-decision as goal (Zeeuw & Licher, 2008). An area-oriented approach demands a fundamental change in the way of thinking about infrastructure. This counts for every actor involved and not solely for the initiator of an infrastructure project (Arts, 2007). Carefully embedding infrastructure into an area is not the same as area-oriented infrastructure development, it demands a procedural approach in which actors align their contribution and divide the risks on the short and long term (De Zeeuw, 2008).

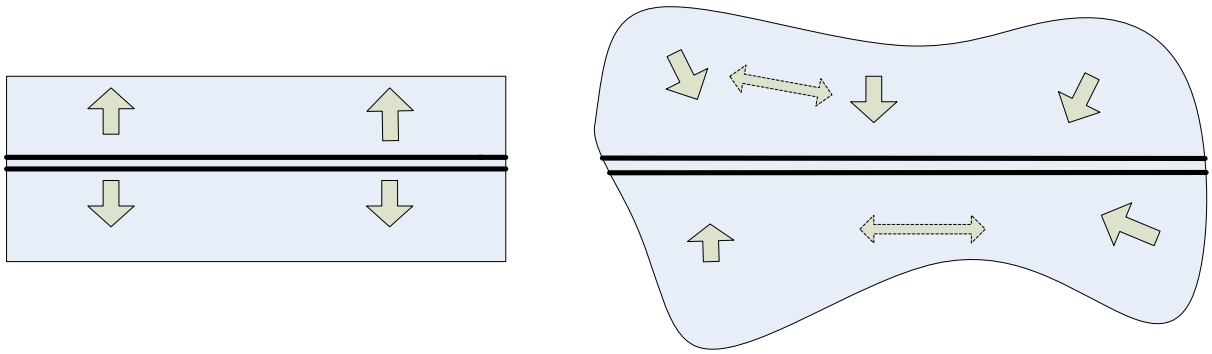


Figure 9: An inside-out perspective (left) vs. an outside-in perspective (right) (figure based on (Heeres et al., 2012a)**)**

In order to cope with the complexity of the situation and the inevitable uncertainties, area-oriented planning is a flexible approach. It is necessary to work with plans that are more open and are able to connect stakeholders. The openness of plans offers space for the unpredictability and dynamics of a situation (Dammers & van der Spek, 2004). If executed well, such plans even offer the possibilities to change when they are implemented. Spatial developments have a long-lasting influence on the area and in order to meet the societal dynamics spatial developments require a certain degree of flexibility (Dammers & van der Spek, 2004).

Benefits

Area-oriented planning has a number of important benefits. First of all, it links an infrastructure project to mobility in general and considers other sectors and the complete network (Struiksma et al., 2008). It therefore promotes a better alignment to other sectors and networks. Next to that, it helps to prevent possible resistance for much of the same reasons as participatory planning, as participation and collaboration with stakeholders is part of this approach. Furthermore, it brings new economic or social opportunities which would probably have been missed with an object-oriented focus. Through a proactive attitude the potential of an area is used to the fullest. Attached to this, the achievement of synergetic outcomes is one of the most important benefits of this approach. Synergy is the combination of existing aspects in such a way that the combination results in extra value compared to the sum of the single aspects (Dutch Green Building Council, 2012). In order to achieve these synergetic outcomes it is important to link infrastructure development to spatial potentials/benefits in an early stage (Elverding, 2008). An example is co-creation, which is the joint development of plans and projects (Dutch Green Building Council, 2012). This can, for example, be done through workshops and meetings with the public, organized by municipalities or developers to jointly take up the planning of public space, or the erection of public facilities. Through the combination of infrastructure and other planning fields, synergetic outcomes can be achieved which are more resilient and better able to deal with uncertain future development. Furthermore, these synergies can also provide opportunities for the public administration to capture value increases and so recover some of the public investment. An example is the increased tax income as housing prices rise due to the developments in the area. To sum up these benefits, area-oriented planning stimulates the proper alignment with other spatial policy sectors and

can potentially lead to sustainable development as it has a much broader scope and aims at enhancing the quality of the environment. This is strengthened by the fact that it anticipates to the local needs and demands and aims to deliver societal extra value.

Area-oriented planning in policies

The benefits of area-oriented planning are widely acknowledged by the Dutch government, as can be witnessed in several policy documents, such as the 'Ondernemingsplan 2015' (Business Plan 2015) of Rijkswaterstaat, which promotes sustainable development and area-oriented development. There are numerous other examples of policies or governmental statements that promote area-oriented planning and some of them are elaborated below. For example, the MIRT rules framework of 2008, which applies to all infrastructure projects, states the preference to exert as many project as possible in an area-oriented way. The aim of such an approach is to create a certain extra value, which can be support, shared costs or spatial quality (Ministerie van Verkeer en Waterstaat & Ministerie van Volkshuisvesting Ruimtelijke Ordening & Milieu, 2008). Also, in 2008 the former minister of Transport, Camiel Eurlings reports in a letter to the chambers of parliament about the progress of infrastructure projects. He states that administrative consultation gets more and more integrated and area-oriented and the focus is on area-oriented projects. The Elverding Committee (2008) has investigated the current infrastructure planning, following problems especially due to cost and time overruns. Their recommendations have been very influential, also stressing the importance of an area-oriented approach and the early involvement of stakeholders. Careful integration of infrastructure is not enough, it should be combined with developments that improve the spatial quality (Elverding, 2008). In order to integrate and align urban and infrastructure developments, the 'R' of 'ruimte' (space) was added to the MIRT. It aims at enhancing the coordination between national ministries and other government parties, better investments on basis of area-oriented strategies and an integrated programming of transport infrastructure, housing, business sites, water and landscape issues (Struiksma et al., 2008). To conclude, Rijkswaterstaat has even included the enhancement of spatial quality in its mission statement: '*We maintain and develop the national road, waterways and water system and step up for a sustainable environment*' (Rijkswaterstaat, 2009).

Experiences in literature

As there are already some experiences with forms of area-oriented planning in other planning fields it is interesting to see which 'lessons learnt' can be distinguished. First of all, area-oriented planning is not new to Rijkswaterstaat. As mentioned in the introduction, the 'Room for the River program' is a successful program, integrating various interests and achieving mutual gains (Struiksma & Tillema, 2009). There were strong incentives to take such approach. The near-floodings of 1995 and 1998 urged Rijkswaterstaat to take measures and the riverine areas offer good opportunities to integrate various interests. Also, improving the spatial quality was part of the program's objective. An area-oriented approach in road projects can only be witnessed in several recent and frontrunner projects. Therefore, experiences about area-oriented planning of road infrastructure are still limited. The achievement of mutual benefits can indeed be observed in these projects, for example the tunneling of the A2 highway

in Maastricht, uniting the once split city. The reason to approach these projects in an integrated way is the high level of involved interests which makes cooperation inevitable. For the same reason, the construction of a missing part of the A4 highway in Midden Delfland has resulted in a regional agreement by trial and error (Rijkswaterstaat, 2011). Although it is not following a truly area-oriented approach, it shows that some things are changing and that such approaches do work, as after forty years of discussion the construction is now finally underway. An investigation of two area-oriented highway projects, A7 Sneek & A4 Leiderdorp, also shows good results considering extra value creation and enhanced cooperation (Jager, 2009). Furthermore, through the programs 'Route Design' and 'Highway Panorama' attention is given to the aesthetic aspect of highways. However, these context-sensitive designs are still reasoned from inside out, centering the infrastructure (Heeres, Tillema et al., 2012b). A paradigm shift as happened with the Water Management has not yet taken place in road-infrastructure planning (Struiksma et al., 2008).

More experiences are available in the field of urban planning as area-development features a longer history. Some large scale area-developments have proved to be too complex and impracticable (Hajer, 2011). This can also be witnessed in infrastructure projects, such as the aforementioned A2 project and the Mainport Corridor South A4 project, of which the latter proved too complex to implement (Zeeuw & Licher, 2008). As the government cannot or does not want to take up such large scale projects, we should focus on smaller scale area-developments according to Hajer, with more opportunities for private or citizen initiatives. Area-development projects also tend to be more expensive initially (Stead & Meijers, 2009; Zeeuw, 2007). Area-development used to compensate these costs through revenues from selling houses (Janssen-Jansen, 2010), but since the recent financial crisis this has changed. Infrastructure development features limited possibilities to create revenues from housing (Teisman, 2012) but can though be attractive to, for example, business-site development. Furthermore, in comparison with area-development it features a clearer focus on investments, sectoral powers are connected to integrated development powers (Teisman, 2012). Teisman (2012) and Dammers et al. (2004) both point at the importance of ambassadors, people who promote the area-development and have the time, skills and power to do so. A lack of these people is often observed in the region (Dammers & van der Spek, 2004). Another observed prerequisite is the creation of visionary images or plans, as was observed by Teisman (2012) in several projects. This is in line with the theory on building institutional capacity. Collaboration is an important aspect but proves to be cumbersome in some cases, for various reasons. Fruitful cooperation profits from the combined development powers, while bad cooperation stimulates the use of hindrance powers (Janssen-Jansen, 2010). Cooperation is initially based on self-interest but aims to reach a shared interest (Teisman, 2012). Stead & Meijers (2009) point at the instrumental (e.g. defining costs and benefits of collaborating) and cultural difficulties (e.g. organizational culture of technocracy) of collaboration. Furthermore, the political dynamics can hamper cooperation (Teisman, 2012) and the more governments are involved, the more complex the project becomes (Teisman, 2012). To conclude, Van Rooy (2006) points at the success of development planning, which is its broad recognition. The struggle however remains to practice it and to improve this new way of working, as well as to discover the consequences for everyone.

International perspective

The problems and issues encountered in infrastructure planning are not typically Dutch but are apparent in many countries. For example, in other countries the planning of transport infrastructure also takes much time, in the order of 10 to 20 years (Lenferink, Tillema, & Arts, 2008). The trend towards more integrated infrastructure planning is broadly visible in Europe and many other 'western' countries (Counsell, Allmendinger, Haughton, & Vigar, 2006; Heeres et al., 2012a; Stead & Meijers, 2009). Infrastructure-land use integration is mainly known by the term of area-oriented planning in the Netherlands but there exist some variations, such as place-based policies, as is used by the OECD (2010). Teisman (2012) indicates some shared problems among several European countries, such as the stacking of public accountability (UK) and high administrative pressures (UK and France). Planning systems reforms in the UK in 2004 enhanced an integrated approach (Counsell et al., 2006), rephrasing the relationship between road infrastructure policy and the spatial planning system (Heeres, Tillema et al., 2012b). Other European countries, such as Denmark, Sweden, and to a certain extent France are also making efforts to promote sustainable and multimodal networks in which socio-economic values are in balance with social and environmental values (Hull, 2010). However, this proves to be difficult as the responsible regional authorities lack the funds and capacity (Hull, 2010). Policy integration is also stimulated by European policies, such as the European Spatial Development Perspective (ESDP). In 1999 the ESDP considers integration as a key issue in spatial planning (Stead & Meijers, 2009). Furthermore, in 2007 the ministers responsible of spatial planning stated that economic development should include environmental, social and cultural aspects (Agenda, 2007). Since the early 1990s several reforms in the transport and spatial planning policies have taken place in the USA, recognizing the importance of multimodal solutions (Heeres, Tillema et al., 2012b). In order to break down the traditional silos of housing, transport and environmental policy, strategic partnerships are erected at the federal level. Although the attitude of the different states varies a lot, several states have developed policies on context-sensitive approaches to motorway planning (Heeres et al., 2012a). Context-sensitive approaches pay attention to lasting community values through design and preserving community, cultural, natural, and scenic resources (Heeres et al., 2012a). A popular approach In the USA to increase public transport efficiency in coordination with land-use development is transit-oriented development (TOD). Mixed-used developments are encouraged around multimodal nodes and corridors in order to come to balanced and compact developments and efficient multimodal transport (Heeres et al., 2012a). TOD is expected to offer 'tremendous sustainability benefits' (Cervero, 2006) and is also applied in Canada, Australia and Japan (Heeres et al., 2012a). Community-based strategies can be found in Australia and Canada (Connelly, Markey, & Roseland, 2009) while New Zealand shows a similar approach as the Netherlands. The New Zealand Transport Agency (NZTA) promotes an integrated planning strategy that connects land-use planning, transport planning and transport investment (Heeres, Tillema et al., 2012b). We can conclude that the developments in the Netherlands are part of a broader international trend, aiming at integrated and sustainable development (Heeres, Tillema et al., 2012b).

3.3.2. Institutional capacity-building

A change towards area-oriented planning does not only involve the content and scope of technical plans and designs, but also covers a desired social transformation, represented by changing organizational and institutional arrangements (Hansman et al., 2006). A different style of governance is needed, one that focuses on the ability to build coalitions and orchestrating the various interests involved (Salet & Woltjer, 2009). Shared visions on actions and solutions can only be created through interaction and understanding of mutual standpoints. For this reason integrated approaches benefit from flexible, multi-level governance networks since these are more capable of involving a plurality of actors (Heeres, Tillema et al., 2012b). Furthermore, shared visions and collaborative efforts are needed to deal with 'wicked problems' and to come to sustainable spatial development (Nooteboom, 2006). Therefore, the success of area-oriented development will be strongly dependent on the modified organizational arrangements to allow a broader spatial-functional development to take place. It requires broad and flexible stakeholder coalitions with various actors from various levels and a focus on mutually shared development directions (Heeres, Tillema et al., 2012b). An approach that stimulates such a change in governance style is collaborative planning, an approach that aims at collaborative action through institutional capacity-building. Institutional capacity-building therefore forms the second part of the theoretical framework.

Central to the ideas of collaborative planning is that it aims at building networks and institutional capacity (Woltjer, 2005). It reflects a position which is being termed the 'new institutionalism', paying attention to culture, local knowledge and networks (Healey, 1998). New institutionalism deals both with formal and informal rules and structures and how institutions embody values and power relationships. Not solely the impact of these values and power relations is considered but also the interaction between institutions and individuals (Lowndes, 2001). Through the fragmentation of the government apparatus and the growing importance of multi-actor networks it becomes clear that institutions are not just organisations and that 'weak ties' can be as important as formal relations (Lowndes, 2001). According to sociological institutional approaches institutions fundamentally shift towards more informal-rule, dynamic, bottom-up and relational forms (Lowndes, 2001). Sociological approaches focus on *institution building*; a process in which through mobilising and pursuing shared commitment, contingent unity of meanings and collective action a gradual transformation of institutional aspects is achieved (Gualini, 2001). In line with these thoughts is Healey's collaborative planning, which focuses on building *institutional capacity.* Healey defines institutional capacity as the '*ability of administrative and government organizations and agencies to respond to and manage current social and environmental challenges through decision-making, planning and implementation processes. It includes, for example, 'the ability to make relational links, across cultural barriers, organizational divisions and fractures in the distribution of power'* (Healey, 1997).

By building institutional capacity, one enhances the ability of place-focused stakeholders to improve their power to make a difference of their place (Healey, 1997). It not only reduces unnecessary transaction costs or constrains undesirable actions but, more importantly, it promotes social acceptance, the legitimacy of decisions and innovate ideas, plans and actions (Hudalah, 2010). A lack of

institutional capacity in projects thus at least results in marginal societal extra value and at the worst resistance and conflict. As mobilising factors of building institutional the notions of *discourse* (knowledge resources) and *policy network* (relational resources) can be distinguished as being internal to actors, while *opportunity is* a mobilising aspect external to the actors. Discourse can influence planning processes through framing the way agendas are set, issues defined, problems are understood and solutions formed (Hudalah, 2010). Networks of social relations act as a basis for effective collective action in a context of decentralised and fragmented places and societies (Castells, 1996). The opportunity enables the actors to read cracks in existing power relations, to recognize contradictions and conflicts and encourages them to realize that they need to reflect on their own actions, that they need to work with others and that they need to evolve different processes (Healey, 1998).

Healey (1998) presents five concepts of how to build institutional capacity:

(1) integrative place making

The first concept is integrative place making. By developing ways of thinking that link economic, social and natural values an integrative imagination can be created. This frame of reference can be translated into actions and helps to coordinate these actions. Characteristic of many welfare state organisations is a strong sectoral separation which developed its own policy fields. This sectoral division is problematic in situations of ´place-making', where multiple interests meet. There is evidence that in situations of a strong local government a way of thinking is developed that link economic and social life and interrelate this with qualities of the environment (Healey, 1998). When discussing the qualities of spaces and the interrelationship between small places and larger spatial organisations not only the policy elite is involved but local communities too, contributing to shaping local identities. In turn this may influence local politics and thus shapes agenda setting, public investment and the use of regulatory power.

(2) collaboration in policy making

In the past 'place-making' was dominated by technical experts and administrators, who handed over their policies to the government who then usually just approved these expert-based policies. Policy making was therefore reserved for a narrow range of players. However, this way of policy making has shown its failures and collaboration in policy making has multiple benefits. By collaborating with multiple parties in policy making, more parties get 'a sense of ownership', which can improve public support and thus ease implementation (Woltjer, 2002). A stakeholder is less likely to object to a policy that was partly made by himself. Furthermore, such a collaboration and sense of ownership stimulates action and brings in a pool of resources. The involvement of local citizens shoots up when they can fully participate, which leads to mental ownership and care for their environment (Teisman, 2012).

(3) inclusive stakeholder involvement

In the 1970's a new player entered the planning practice, the 'public'. Their willingness to be involved was answered by consultation and participation. However, as this early participation was mainly reactive and led to the promotion of narrow interest, it did not help planning practice to move forward. Their interests were regarded to be fixed, enlarging the contrapositions and causing a phenomenon known as Nimbyism (not in my backyard). When starting with the assumption that people may not know what

they think about an issue and might learn think differently through discussion, the result of such a discussion between stakeholders may generate both mutual learning and even consensus building before people come to 'fix' their positions (Healey, 1998). An early and 'open-minded' stakeholder involvement may therefore be beneficial. Next to that, involving stakeholders with a range of points of view on issues enriches the process and helps to detects impacts and possible future problems about policies. The inclusivity of stakeholder involvement may also help to legitimate policy decisions. A way of exploring the range of stakeholders to be involved is stakeholder mapping but it takes more to come to inclusive stakeholder involvement that fosters stakeholders to make a difference to the quality of their places (Healey, 1998). This would require a proactive approach and a move towards the higher rungs of Arnsteins ladder of participation which concern 'real participation'.

(4) use of 'local' knowledge

One of the main reasons for widening involvement in planning processes is that decision makers and experts lack sufficient knowledge about the places they deal with. They are only partly aware of the qualities attached to places, the problems, potential solutions and how to implement policies effectively (Healey, 1998). Local people on the other hand have a day-to-day experience of a place and can therefore provide valuable 'local knowledge'. The day-to-day experience of a place can not be captured in theories or facts. The usage of this local knowledge is therefore an important prerequisite for collaborative action. '*Officials, professionals and experts need to recognise that they have only access to but one of many form of knowing and valuing*' (Healey, 1998). Each group, community or organisation builds up its own 'local culture' which structures their meanings and actions. In order to obtain and use the local knowledge the involvement of a broad range of stakeholders is necessary. As stakeholders originate from different 'social worlds' with distinct ways of reasoning and argumentation and different values, it requires awareness and respect for these differences in order to use local knowledge. Local knowledge is indispensable to come to solutions that improve the quality of places and can help to implement policies efficiently and to detect problems in an early stage.

(5) building relational resources

The final concept deals with building relational resources. It involves building a context in which the different stakeholders experience trust and appreciation. Such an environment make the stakeholders feel less hostile to other's point of view and stimulates the exchange of information, knowledge and increases the understanding among the stakeholders. In situations with a relatively great trust between stakeholders, the processes run clearly smoother than in situations where continuously has to be shown there is no reason for distrust (Teisman, 2012; Tillema et al., 2012). A lack of a rich social infrastructure leads to the solely promotion of self-interests of stakeholders. *Social capital*[3](Falk & Kilpatrick, 2000) or *Institutional Capacity* (Amin & Thrift, 1995) deals with the quality of the social arena, which depends on

[3] Social capital: the product of social interactions, which can contribute to the social, civic or economic well-being of a community. The interactions draw upon knowledge and identity resources and depend on various dimensions, such as the quality of internal-external relations, the historicity, futuricity, reciprocity, trust and shared norms and values (Falk & Kilpatrick's, 2000, p. 103-104)

the density and range of networks and the translatability of different norms and values between the stakeholders. Having a social arena of good quality makes it flexible and responsive to changing circumstances and ensures a good quality product through constant checks.

3.3.3. Framework

As stated above, area-oriented planning fulfils the needs for more integrated and sustainable infrastructure development. According to Heeres et al. (2012) the practical implementation of area-oriented planning has two main dimensions:

- *the spatial-functional plans and designs*
- *the related institutional organizational arrangements*

The spatial-functional perspective focuses on integrated infrastructure planning and on the economic, environmental and social aspects of planning. The dimension of organizational arrangements considers the governance styles and attitudes of planning. Integrated development requires a different governance attitude, in which vertical and horizontal coalitions of public and private actors collaborate to arrive at shared development visions (Priemus et al., 2001; Hajer et al., 2004; Banister, 2008 in Heeres et al., 2012). As developing infrastructure cannot be executed by a single party, it involves collaboration and multiple stakeholders (Heeres, Tillema et al., 2012b) and complexity is inherent to it (Zeeuw, 2007). To not be inclusive solely from a spatial point of view, the involvement of various actors is important, which can be done through collaborative and participative planning (Arts, 2007). As mentioned before, collaborative planning can be useful as it focuses on the promotion of different interests and facilitates boundary-bridging processes (Polk, 2011). Heeres et al. (2012) acknowledges this, stating that a collaborative approach is necessary to combine the top-down policy objective of sustainability and the bottom up area-specific developments.

'To ensure this, area- oriented planning intends to combine a sustainable policy agenda with sustainable planning processes that, from the early stages on, exploit collaborative actor capacity.' (Heeres et al., 2012)

A collaborative approach is necessary to overcome the gap between policy and implementation of sustainable infrastructure and the broad involvement of actors offers innovation and creativity (Heeres, Tillema et al., 2012b). Successfully exercising collaborative planning demands the building of institutional capacity as it entails the ability of governments to respond to and manage current social and environmental challenges (Healey, 1998). Institutional capacity-building is therefore vital too for a successful implementation of area-oriented planning and it present the necessary governance change. This is acknowledged by Polk (2011), who presents institutional capacity-building as a strategy to deal with complexity and the challenges of sustainable urban development. Failing to build and exploit institutional capacity therefore goes at the expense of societal benefits, as was shown by a study of Polk (2012). As area-oriented thus not solely involves the integration of different values and spatial-functional aspects, but also a difference governance style, both dimensions of area-oriented planning

are assessed in this research. That brings us to the framework, as presented in figure 10. The indicated difficulties and the demand for sustainable development can be addressed by adopting area-oriented planning. Through the spatial-functional integration and the adoption of a governance-style that aims at building institutional capacity, the successful implementation of integrated and sustainable infrastructure planning can be achieved, as well as the achievement of extra value.

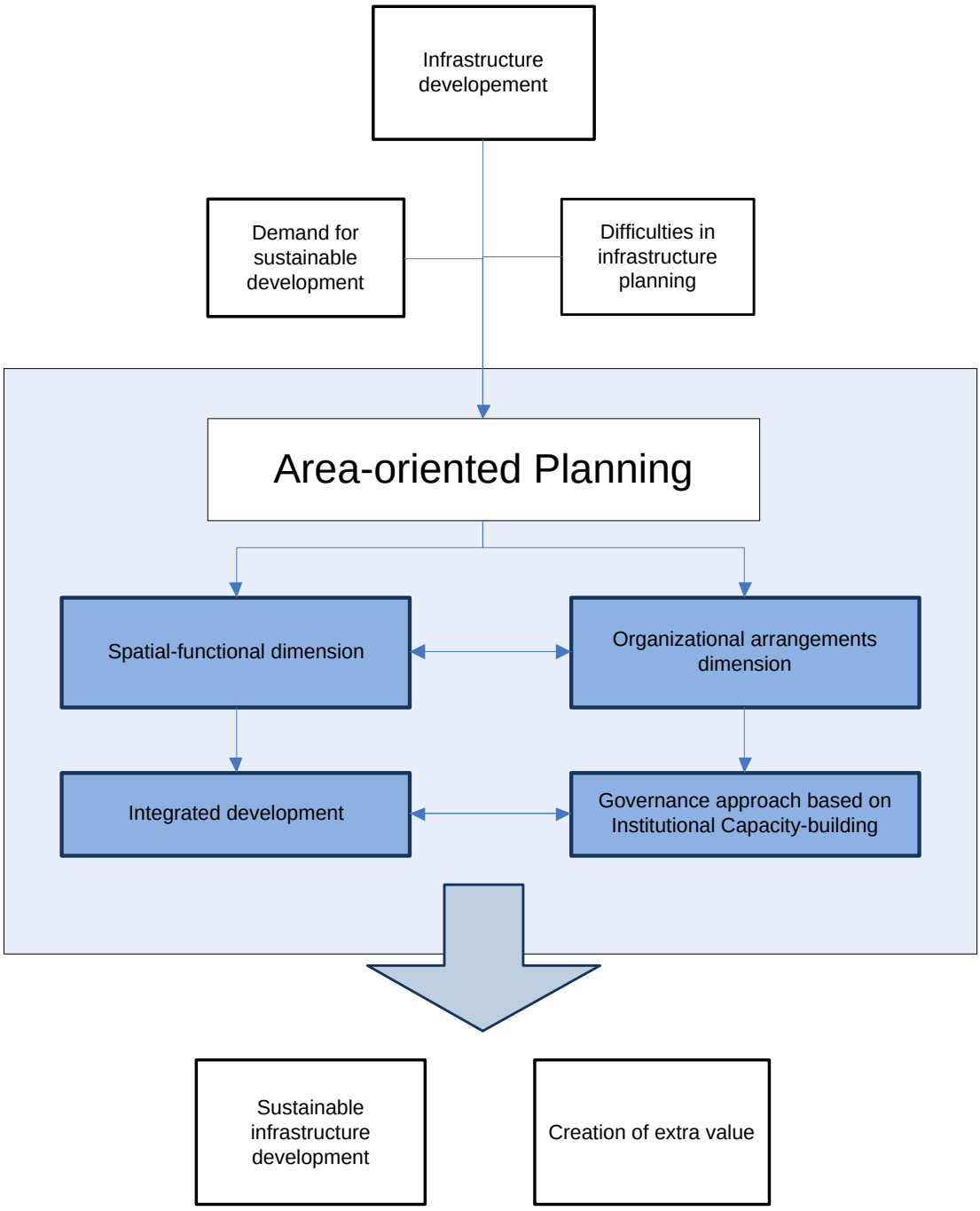


Figure 10: Theoretical framework

Chapter 4: Methodology

In the previous chapters the research topic and the underlying theory of this research are elaborated. In order to see whether lock projects show an area-oriented approach empirical research is done. This study follows a research methodology which is supported by research methods. In such, the methodology stands for the framework associated with a particular set of assumptions, such as scientific method and case study research, and the methods stands for the way data is collected and analyzed. (O'Leary, 2010). In this chapter the chosen methodology and methods are explained and two extra paragraphs address the interview design and the way of analyzing the data.

4.1 Methodology

In order to get a good impression of the current planning practice of lock projects, decision-making processes in progress are assessed. We therefore analyze three case studies. Case studies research entails '*an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used*' (Yin, 2009). By using case studies we maintain the richness of the complex cases and it allows us to see their consistency. The strength of case study research lies in the power of example (Flyvbjerg, 2002). By doing a 'multiple-case study' we can consider the relationship between the most important variables of the cases. As the empirical evidence of multiple cases is regarded as more powerful and the overall research more robust (Yin, 2009), it is chosen to consider three cases on a more general level rather than investigating one case more in-depth.

The three case studies that will be analyzed are the following projects:

1 Sluis Eefde, realization of a second lock chamber
2 Prinses Beatrix Sluizen, new third lock chamber
3 Bypass of the Zuid-Willemsvaart, bypass of the canal of 9 km and including two locks

The cases are selected since they are all managed and initiated by Rijkswaterstaat. Other governmental bodies can also perform lock projects in the Netherlands but as Rijkswaterstaat is the operator of the main waterways the bigger lock projects will fall under the authority of Rijkswaterstaat. Also, to prevent any greater contextual dissimilarity it is chosen to stick to projects of Rijkswaterstaat. This has also a pragmatic reason, as information of these projects was easily accessible. Also, the projects are currently in the decision-making or execution phase, which guarantees availability of sufficient data and the involved people are still well aware of the project. The decision-making phase will in most cases not be finished during the time-span of this research but as these processes are already in progress for several years the performance and attitude towards integrated planning can sufficiently be analyzed. The specific reason for choosing *Sluis Eefde* is the interesting environment of the lock, featuring a very active local community. Furthermore, it is indicated as one of the biggest bottlenecks in the current waterway system. The *Prinses Beatrix Sluizen* are one of the busiest locks in the Netherlands and together with the ongoing developments in the area it offers an interesting case. The third case study, the *Bypass of the Zuid-Willemsvaart*, is somewhat different than the other two cases. Instead of the expansion of a lock it consists of a new canal of 9 km, including two new locks. It is a unique waterway project as new canals

are rarely built and features a far bigger spatial impact compared to the other two cases. It will be very interesting to see in which way Rijkswaterstaat deals with a waterway project with big impacts and it also presents a contrasting case to the two lock expansions. To conclude, the selection of the cases was done in consultation with a waterway expert of Rijkswaterstaat.

The chosen cases represent two literal replication cases (Sluis Eefde & Beatrixsluizen) and one theoretical replication case (Zuid-Willemsvaart). The literal replication predicts similar results while the theoretical replication presents contrasting results but for anticipatable reasons (Yin, 2009). Sluis Eefde and the Beatrixsluizen are quite similar projects, as the locks are extended with an extra lock chamber and the spatial impact is therefore limited in both projects. The Zuid-Willemsvaart intersects the landscape over a length of 9 km and the spatial impact is therefore much bigger. From a hypothetical point of view the Zuid-Willemsvaart is more likely to pay more attention to its environments as the impact and conflicting interests are bigger.

This case study has mainly an exploratory purpose as it tries to uncover the level of integration in lock projects and the use of institutional capacity in these projects. It however also features an explanatory function, a combination which is not uncommon (Yin, 1984). *An explanatory case study is a case study whose purpose is to explain how or why some condition came to be* (Yin, 2009). This will be done by looking at how institutional capacity is used and build in the projects and how they affect the project's performance. Furthermore, the research is based upon theories of area-oriented planning, which is advocated by several authors as the way towards integrated and sustainable infrastructure development. In this research we take an objective stance towards these assumptions. We therefore critically reflect upon this by looking whether area-oriented planning is indeed of value to the planning of locks in the Discussion (Chapter 7).

4.2 Methods

Case study research usually goes with qualitative methods and techniques of research. Quantitative research is less capable to capture the complex and specific situation of case studies (Block, 2009), therefore, qualitative research is preferred in this case. Through multiple ways of data collection, each with its own strengths and weaknesses, a more adequate image of the decision making process is given. These different resources are highly complementary and it is therefore eligible to use as many sources as possible (Yin, 2009). Furthermore, this methodological triangulation decreases a too fierce impact of one source on the results. When studying an organization one should not solely rely on personal interviews but accompany it with other sources (Yin, 2009). In this research we will use existing literature, published documents of the three case studies and interviews with relevant actors of the case studies to obtain data. In order to check the derivative first results a focus group discussion is organized to check and sharpen the results and to formulate concrete recommendations.

The following analyses are carried out:

Document analysis: Documentary information is likely to be relevant to every case study topic (Yin, 2009). Relevant documents of the case studies are collected and analyzed. These documents include at least the most important formal documents, such as stakeholder analysis, ambition documents, EIA's and (draft) route decision or (draft) zoning plan. The document analysis provides important information to analyze the integrality of the project but can also provide hints about the use of institutional capacity. However, this information should be used critically as it is to a certain degree subjective, caused by the author and the interpreter/reader (O'Leary, 2010). Therefore, valuable information or uncertain bits of information are double-checked via the interviews.

In-depth interviews: Interviews are one of the most important sources of case study information (Yin, 2009). Interviews are targeted and insightful, providing perceived causal inferences and explanations. Most case studies are about human affairs or behavioral events and well-informed interviewees can therefore provide important insights into these affairs or events (Yin, 2009). In total 10 in-depth interviews are conducted with employees of Rijkswaterstaat. By doing in-depth interviews of about 1-1, 5 hour greater understanding was achieved about aspects of institutional capacity, such as collaboration and relationships with stakeholders and about their own perceptions. In addition, it is also a welcome source to check document findings.

Focus group discussion: A focus group discussion involves recruiting and convening a small group of people and moderate a discussion about aspects of your case study and deliberately try to surface everyone's view (Yin, 2009). The benefit of a group discussion is the fact that you can speak to several people at once. Furthermore, comments of others can stimulate and inspire one to share its opinion (Baarda, De Goede, & Teunissen, 2005). However, when conducting a focus group discussion one should bear in mind that people can be influenced by other group members and therefore do or do not share certain views (Baarda et al., 2005).

4.3 Interview and focus group design

Interviews

Two groups of interviewees were selected. Next to two to three interviewees per case also two interviewees were selected who work on lock projects more in general and policy-based. As they are dealing with several lock projects at the time they can provide more general information about lock planning practices in the Netherlands. Interviewees of the project were selected as being the (former) project manager or environs manager. An additional interview was conducted with one technical manager to obtain some missing data. As the composition of a project team frequently changes over time the interviewees were involved for a longer period in the project. Due to time constraints it was not possible to interview people from outside the organization of Rijkswaterstaat. It would have been very interesting to obtain the views of other involved parties, such as municipalities and local inhabitants, especially with respect to institutional capacity-building. Therefore, only a single-sided view

is obtained, showing us from a Rijkswaterstaat's perspective how institutional capacity was build and used (see also the Discussion in chapter 7).

The following persons were interviewed:

General respondents:

- Respondent A: works at the program-office of RWS and deals with inland shipping
- Respondent B: works on the DBFM Lock-program of RWS, a program of 5 locks that use a DBFM-construction, and is the principal of the Zuid-Willemsvaart project

Beatrixsluizen:

- Respondent C: former project manager of the Beatrixsluizen and is currently project manager of two other lock projects
- Respondent D: current environs manager of the project
- Respondent E: current assistant environs manager of the project

Sluis Eefde:

- Respondent F: former project manager of the project
- Respondent G: current environs manager of the project

Zuid-Willemsvaart:

- Respondent H: former project manager of the project
- Respondent I: current environs manager of the project
- Respondent J: former technical manager of the project

The interview questions used are based on literature about area-oriented planning and institutional capacity-building. A representation of the interview question-scheme used can be found in annex III. However, interview questions were always tailored to the specific interviewee and also slightly changed over time due to new insights. To test the interview questions a test-interview with an environs manager of a non-case study project was done.

Focus Group

Respondents for the focus group discussion were selected as being interviewees or being involved in lock project of RWS. Former interviewees were invited as they could reaffirm their statements and check the researcher's interpretation and thereby strengthening the findings. New respondents were invited as they would enlarge the respondents' pool and could affirm, sharpen or reject the findings based on their experiences. Unfortunately due to some last-minute cancellations the group discussion was executed with 4 participants, including the researcher. The number of participants was preferred to be slightly higher but the resulting discussion was still good and valuable, with participants of various backgrounds. The following respondents participated:

- Respondent A: see above
- Respondent K: works at the WVL department of RWS and among others works on the VONK-program
- Respondent L: current environs manager of the Meppelerdiepsluis project, a lock project of RWS

The focus group discussion was organized with the purpose to check and sharpen the first findings and to possibly formulate recommendations. In order to start a discussion nine statements were formulated based on the first findings. The statements can be found in annex V. The statements do not entirely present the first finding but are sometimes made slightly more controversial to start the discussion.

4.4 Analysis

The obtained data is analyzed in two different ways. First, the collected data on the project's performance is analyzed by using the Omgevingswijzer. Second, the interview and the focus group discussion are analyzed via coding along themes.

Omgevingswijzer

In order to make an objective judgment of current practice of lock planning, features of integrated planning have to be considered. The tool used to analyze the case studies is the so-called 'Omgevingswijzer' (Synergy Wheel) (Röling et al., 2001). The 'Omgevingswijzer' is developed by Rijkswaterstaat and offers decision-makers an integrated assessment tool for sustainability potentials (Heeres et al., 2012a). It helps to analyze the sustainability of a project in a systematic way, to facilitate a structured discussion and the formation of collaborative problem definition (Röling et al., 2001). Its power lies in the visual representation of effects of a project (Beukers & Heeres, 2012). The tool enables qualitative information to play a role in decision-making and it broadens the spatial and functional scope of infrastructure, aiming at synergy among different interests. It was initially developed to support MIRT area-agenda's[4] and was adopted by Rijkswaterstaat to support the combination of road projects and integrated area development (Beukers & Heeres, 2012). The tool is currently nearing the end of the pilot phase within the organization of Rijkswaterstaat and a team is preparing it for an organization-wide uptake, implementing it as a standard tool for future infrastructure projects. As the tool is still under development and is hardly applied to waterway projects yet, a review of this method will be given at the end of this thesis (annex I).

The tool considers twelve different themes and visualizes the effects on these themes on a sort of scoring card: the Omgevingswijzer (see figure 11). Per theme several sub-questions make up the score

[4] MIRT area-agenda: the MIRT area-agendas were installed in 2009 and contain a shared vision of the national and regional governments on the acknowledged problems in an area. It contains a vision and development direction, as well as an overview of the projects and programs that can contribute to this vision. It forms the basis of intergovernmental negotiations about future projects (Rijksoverheid, 2014).

per theme. Negative effects are shown in the inner circle in red, positive effects are shown in outer circle in green. An example of some sub-questions is given in figure 12. The method has multiple functions. It acts as a checklist, enables one to compare different alternatives and can check consistency throughout the process. In this research it will be applied to score the overall performance of the projects and whenever possible to compare different stages of a project. The tool is initially developed to be used in a group discussion in which the project's score is discussed with the involved stakeholders and ambitions to improve on certain aspects can be set. However, in this research it is solely filled in by the researcher. This deviation from the initial procedure can be justified by using multiple sources, e.g. EIA, to fill in the Omgevingswijzer. Next to this, all case study interviewees were asked to fill in the Omgevingswijzer too, resulting in four personal versions of the Omgevingswijzer. This was mainly done to retrieve their personal view on the various aspects. And although these versions may be highly subjective, it will be interesting to compare these versions to the 'objective' version.

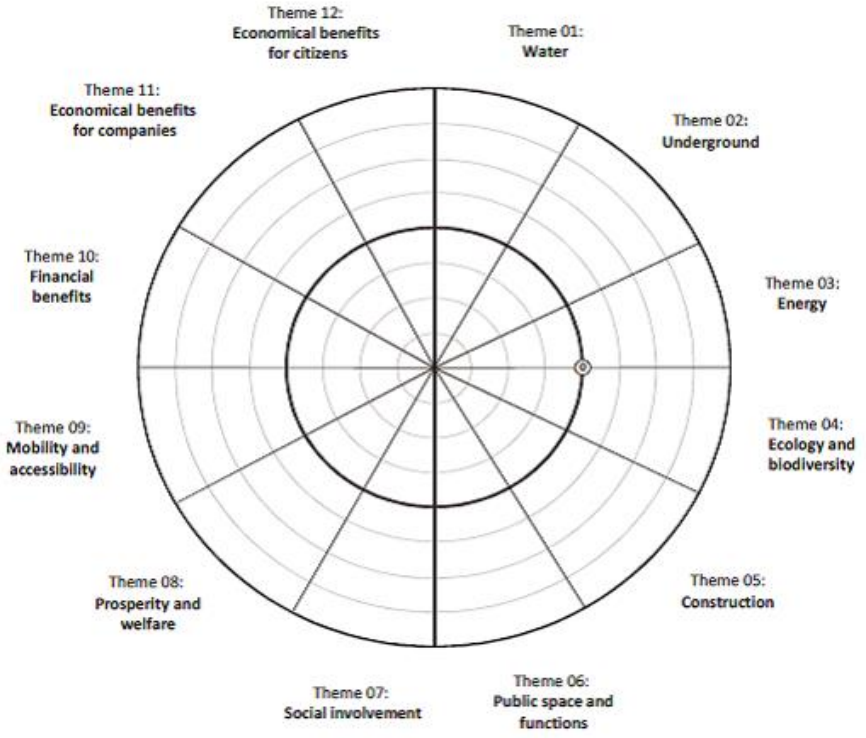


Figure 11: The Wheel of Synergy (Röling et al., 2001)

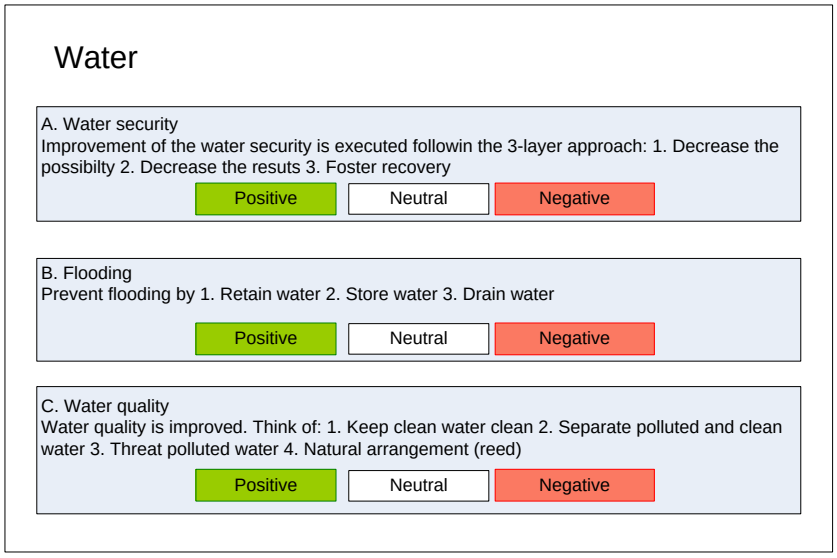


Figure 12: Some of the questions that need to be answered in using the Omgevingswijzer

Analysis of interview and focus group

Before going into the analysis of the interview data some notion to inductive and deductive reasoning has to be made. By exploring data inductively one analyzes the data without a predetermined theme or theory in mind, allowing themes and theories to emerge from the data (O'Leary, 2010). On the other hand, through deductive reasoning one mines the data for predetermined themes of exploration in order to support 'theory' (O'Leary, 2010). The above described Omgevingswijzer may therefore be a strong example of deductive reasoning. Analyzing the interview data however involves both deductive and inductive reasoning. Area-oriented planning also features an organizational arrangement dimension, as it demands a different governance style. As described in the theoretical framework, an approach focused on institutional capacity-building provides such a governance style and the interviews are therefore analyzed by the following themes of building institutional capacity (see also chapter 3.3):

- *Integrative place-making*
- *Collaboration in policy making*
- *Inclusive stakeholder involvement*
- *Use of local knowledge*
- *Building relations*

But, these themes are very broad and entail many aspects. Therefore analyzing the interview data also includes inductive reasoning as sub-themes, belonging to one of the institutional capacity themes, are discovered by going through the data and are not predetermined. To stimulate this inductive reasoning the aspects of institutional capacity-building are conceived in their broadest sense. For example, integrative place-making does not only considers whether there was an integrative and imaginary plan and whether it enabled local communities to actively shape their local identity, but also which factors hampered or stimulated the creation of such a plan. As a result of this the aspects partly overlap, but

this is inevitable. Money for example can influence the integrality of a plan, but also cooperation and the relationship between stakeholders.

Analyzing the interview data has been done by going through several steps. First, the interview recordings are fully written down and read through several times. After this a process of 'coding' started. Coding can be done by word, phrase or theme (Vos, 2012), of which the latter is the chosen approach. Noteworthy parts are marked and linked to each other by connecting themes. The purpose is to cluster important fragments of the transcription around certain sub-themes (Boeije, 2005). This was done through 'axial coding', looking for interconnections between sub-themes. A schematic representation of such coding scheme can be found in figure 13 and the coding schemes per aspect of institutional capacity-building are given in annex II. Analyzing the focus group has been done in the same way but was less inductive. Two or three of the statements are clustered into an overarching theme, with again two levels of subthemes. The different coding schemes of the focus group can be found in annex VI.

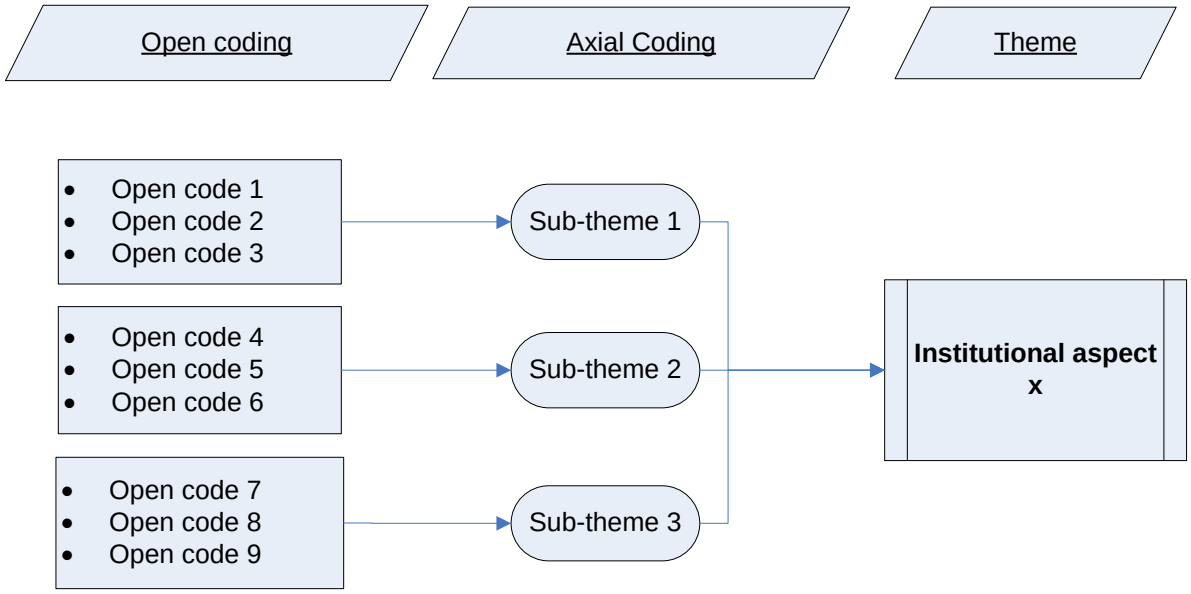


Figure 13: schematic representation of coding scheme of interview

Chapter 5: The Case Studies

In this chapter the results of the case studies are presented, based on the interview and document analysis. Per case study the Omgevingswijzer is given and the five aspects of institutional capacity-building are considered. Coding of the interviews was done on a general level and the coding scheme per aspect of institutional capacity-building can be found in annex II. Each case gives the specific experiences with these aspects.

5.1 Beatrixsluis

The Prinses Beatrix Sluizen are situated in the Lek-canal, a short canal connecting the Amsterdam-Rhine Canal and the Lek River. It is one of the busiest locks in the Netherlands and serves the important shipping route between the ports of Rotterdam and Amsterdam. In 1997 it was indicated in an exploratory study as a bottleneck, since the lock was too small to accommodate the biggest type of inland ships (Rijkswaterstaat, 1997). Since there is a trend towards bigger ships the capacity of the lock had to be enlarged. A bigger and third lock chamber next to the two existing lock chambers was chosen as the most favorable option, especially as closing one of the two existing locks during construction was economically undesirable. Next to an extra lock chamber the canal is widened too, partly due to the new lock chamber, and extra moorings are created. The project was postponed in 2004 but started up again in 2008 as inland shipping was growing faster than expected. At the moment the project is nearing the draft Route Decision, marking the end of the plan-elaboration phase. Tendering will start shortly after the Route Decision and completion of the project is planned in 2020. The project will feature a DBFM-contract and will be one of the first waterway projects executed in such a way.

Next to the expansion of the lock complex there are more developments taking place in the area, making it a complicated situation. Most important is the development of the business park 'Het Klooster', a large business park between the A27 highway and the Lek Canal. Furthermore, the Province of Utrecht has the wish to develop a new inland port in the area, river widening projects along the Lek are being implemented and the in the area situated defense works of the 'Nieuwe Hollandse Waterlinie' (NHW) are being nominated as UNESCO World Heritage. Alignment between all these developments is important, something that was acknowledge by Minister Schultz of Infrastructure and Environment: *'the projects in the area around the Lek Canal are well suited for an area-oriented approach. It is a dynamic environment with many developments in the near future.'* (Schuttevaer, 2012).

Figure 14: Artist impression of the lock (Rijkswaterstaat, 2013)

5.1.a. Omgevingswijzer

Legend	
Nr.	**Aspect**
1	water
2	subsoil
3	energy & materials
4	ecology & biodiversity
5	use of space
6	spatial quality
7	social relevance
8	welfare
9	accessibility
10	investments
11	economic attractiveness
12	public attractiveness

Figure 15: Omgevingswijzer of the Beatrixsluizen

Figure 16: Omgevingswijzer of respondent C

Figure 17: Omgevingswijzer of respondent E

Explanation to the figures 15-17, see annex IV for the complete questionnaire of figure 15.

When looking at the negative impacts, especially the aspect ‘subsoil’ (2) scores negative. This can be explained by the fact that undisturbed soil profiles are excavated and since archeological values are part of this aspect it scores negative because of the negative effects on the NHW. Furthermore, as digging works cause high emissions the aspect of ‘energy and materials’ (3) scores negative. The project damages several areas with natural values and therefore ‘ecology and biodiversity’ (4) scores negative. However, as the project compensates about 127% of the loss of natural areas it also generates a positive effect. Other positive effects concern the removal of polluted soil (2), the improved accessibility and robustness of the transport system (9), and the improved economic attractiveness (11). Furthermore, the project intensively cooperates with the development of ‘Het Klooster’ (5), which yields some win-wins (10). A design document, the ‘ambition document’, is developed which deals with the aesthetic and monumental values of the lock complex and its surroundings. It also deals with the compensation of NHW and this attention for spatial quality explains the positive score (6).

When comparing the different Omgevingswijzers there are many disparities. These can be caused by the different perspectives of the interviewees or the high level of knowledge about technical details necessary for the Omgevingswijzer. In general, the interviewees both clearly had a more positive view of the project and the goals (9, 11) of the project, as well as the attention for spatial quality are clearly indicated. The aspect of ‘water’ shows a remarkable difference. Both the 2004 and 2014 EIA indicate very limited effects on the aspect ‘water’ but both interviewees have indicated positive effects. No other explanation can be found than a positive perceptions and lack of specific knowledge on this aspect. This is probably also the reason why the interviewees scored the aspect ‘subsoil’ less negative, it requires technical knowledge and negative effects may be not be conceived as being a real problem. The aspect of ‘ecology and biodiversity’ also shows very different results. This might be caused by the different perspectives on this aspect. For example, it does damage areas with natural values but these areas do not hold exceptional high natural values. Also, few threatened species are encountered and efforts are made to find a proper solution for these species. Therefore, this aspect is highly susceptible for different views. The difference in the 8th category, ‘welfare’, is caused by the uncertainties as it deals with hindrance, something which will be part of the tendering process and is therefore not defined yet.

5.1.b. Institutional Capacity-building

In the following paragraphs the organizational arrangements are considered by looking at the five aspects of institutional capacity-building. Some of the findings have a direct relation to the spatial-functional dimension of the project and the numbers in the text refer to the aspects of the Omgevingswijzer as shown in figure 15.

Integrative place-making

Due to the existence of several plans in the project's study area, alignment with these plans has always been an issue in this project. Moreover, the project was started in reaction to the municipal plans to build a business park, which would obstruct future canal widening measures.

'*We actually started thinking about it in 1996 when the municipality wanted to build a business park, which they are really doing at the moment. We thought that when we would let them go ahead they would come near the canal and we would never be able to widen it, while we knew it had be widened sometime. So we actually started the project as a reaction on the initiatives of the municipality and to demarcate our space*.' – Respondent C

Alignment with the different plans has taken place and has eventually resulted in some win-win situations in cooperation with 'Het Klooster', such as joint research and collective water storage (10). As the river widening project was too far ahead in planning, alignment was restricted to taking each other's interests into account. The idea of an inland port has always been indicated as a possible future development in documents (Exploratory study 1997, TN/EIA 2004) but has not been in the picture of the project's team. Whether this is due to the limited expression of this idea by the Province or the ignorance by the project team is uncertain, but it was for example not brought in during a session looking for extra values.

'*While searching for extra values the port was never brought to the table, and it was something that came as a surprise when we actually wanted to draw conclusions. It is therefore very difficult to see it as a chance for the project.'*- Respondent C

Considering the inland port, it has been stated several times, e.g. Bestuursovereenkomst Lekkanaal – Het Klooster, that the national government supports the realization of an inland port but from the project's view it is always seen as a risk and it is a relief to the project that it can not be situated along the Lek Canal for safety reasons. An inland port along the Lek Canal would have had huge consequences for the NHW and the recreational value of the area as cycling routes would be blocked, making it even more complex.

Something similar has occurred to the defence works of the NHW. Damage to these objects has been indicated as a negative aspect of the project (2) in several documents but has only escalated into a real problem in the past few years, especially due to its UNESCO world-heritage nomination. Dealing with this issue was inevitable and has therefore led to a process of negotiation and collaboration which eventually guarantees an integrated solution for the NHW and the continuation of the business park development and the lock expansion. The solution for the NHW is elaborated in a so-called Ambition Document, drafted by architects in cooperation with stakeholders dealing with the NWH. The document also deals with the aesthetics of the project and the monumental values of the existing locks (6).

As part of an innovation programme of Rijkswaterstaat the 'extra value scan' was used in the project to search with stakeholders for possible extra value generation. This resulted in several potential business

cases such as generating renewable energy, combining water and nature, cooperation and alignment of digging works with the room for the river project, a cycling route plan and a teahouse (Rijkswaterstaat, 2011). However, except for the cooperation in digging works none of these options to create extra value have been implemented and the project therefore misses opportunities to generate positive effects on energy-use (3), welfare (8) and nature or watersystem aspects (1,4).

'There were some things really done in the area but a few of those points of which I thought they were good to achieve, they did fall in barren ground' - Respondent C

'*And those extra value chances, why did RWS not pick that up?' (interviewer) -- 'At a certain moment you have to consider your task… RWS is not a teahouse operator, we are about infrastructure'* – Respondent C

One of the reasons was the severe budget cuts the project faced. In order to continue the project had to be retrenched, even cancelling some safety measures. It partly explains the struggles with the NHW, costing an additional 7, 2 million euros, something that had to be explained and defended to the project's principal.

´We eventually agreed on a budget that was acceptable to everyone. But I did not receive orders to spend that money and you need a complete story to underpin and clarify why it is needed´ - Respondent C

It is not possible to speak of true integrative place making in the case of the Beatrixsluizen. Especially the social aspects (7, 8) receive very little attention while even for these aspects there were opportunities for improvement. An example of this is the construction of a regional recreation centre in the area, the Beatrixsluizen could have easily attributed to these efforts to stimulate the regional recreation. Ambitions were low in this project and constructive cooperation was only executed when there was a need to do so.

'*I feel it almost as a forced area-development. We had to jointly find a solution for the NHW and the municipality is developing a business park so to prevent trouble we had to cooperate*.' – Respondent E

<u>Collaboration in plan-making</u>

As a result of the different interests among Rijkswaterstaat, the municipality and the province in the area, cooperation was inevitable. To secure several agreements, an administrative agreement was signed by the three parties. Cooperation between the parties can speed up procedures, bring synergy benefits and create extra value (Bestuursovereenkomst Lekkanaal-Het Klooster). It also ensures the collaborative solution to compensate damage to the NHW and an area-oriented approach to the developments in the area. When looking at the NHW, the canal widening measures actually push the NHW into the municipal business park project.

'*What you also see is the struggling of the municipality. We are a project of national importance. The lock brings nothing to municipality, all the shipping that passes through goes to Amsterdam or Rotterdam and not to Nieuwegein. Even when there comes an inland port it remains the question whether the 3rd lock brings benefits to the municipality. The business park, that's a local or regional interest. When you look at the different scales, we are sort of pushing the municipality due to of some sort of forces theory. That does also mean we are also pushing the NHW a bit towards them*.' - Respondent C

Despite this fact the municipality has joined in a constructive cooperation to find a proper solution. Other parties involved in the NHW-issue are several governmental agencies; interest associations and commissions which are assigned to the promotion of the NHW. By sharing interests and respecting each other's views a constructive dialogue was set up through several workshops. Eventually after one and a half year a bargaining process led to a solution that is acceptable to one but all parties, costing Rijkswaterstaat an additional 7, 2 million euros. A far more expensive solution would be the buying of land from the municipality to secure a 100 meter wide zone for the NHW, which would be less beneficial for both the municipality and Rijkswaterstaat. But despite being a risk for the project it is important to keep regarding it as chance for the project, according to one of the interviewees. In fact, the solution for the NHW is actually the aspect the interviewees were most proud of.

'*You can still see the complete NHW as a threat to the project. We had to do a Heritage Impact Assessment (HIA) and if we weren't obliged to do that we probably already would have had a draft Route Decision. That is yet to be seen, but you can also remain to see these things as a chance rather than a threat*.' - Respondent E

'I'm proud about how we dealt with the NHW'' – Respondent C

The positive effect of the joint solution is the broad support and sense of ownership of the solution (7). In documents and plans that followed the solution had not to be defended again as the stakeholders were involved in the process towards the chosen solutions. Also, the HIA proved to be negative but this was not a reason for the other stakeholders to rethink their position.

'The HIA questioned the solution, as it resulted in a very low score. But this was not a reason for the stakeholders to question the chosen solution again'. - Respondent E

The cooperation with the municipality was not limited to the NHW, but also involved some smaller things, such alignment of planning and joint research on biodiversity and archaeology. And although these things may not be very impressive, the overall result is better.

'*I noticed at the Beatrixsluis that when you start doing things together, than you achieve results which may not be earth-shattering but which in the end result in an overall better final result*.'- Respondent C

However, the above described cooperation deals with the alignment of two projects. The municipality was not enthusiastic to do something extra in the area, which appeared during the 'extra value scan'.

'Rijkswaterstaat is not a teahouse manager, we are of infrastructure. When the municipality says 'he, I like that idea, it would be great do that', then you can say together, when we build that dike, we do something extra so you get something that you can use. But the municipality was like, we already have a policy for the city centre and in the adjacent neighbourhood are already some cafés and bars. All that sort of questions were bothering the municipality. And when you haven't got someone that is enthusiastic about it, it stops at a certain point.' – Respondent C

'*We did have quite some nice ideas, not very exiting though, but the municipality did not want to be owner of it. They were like, we have a business park here, that's already in preparation for several years and costs us a lot of money, it is purchased and we get it hardly issued so we have only one interest and that is selling land. Al those things Rijkswaterstaat wants, that's up to them, we don't take that up and take ownership of it*'. - Respondent C

This also becomes clear when looking at the municipal future vision. The lock complex is indicated as a landmark site but no developments are attached to the lock and canal expansion. The search for extra value opportunities was also initiated at a quite late moment in the project. Ambitions for the project lacked at the beginning.

'Thinking in terms of ambitions was not really done when we started the project.' – Respondent C

The connection to the realization of an inland port was also made at a very late moment, too late to regard it a chance for the project. In order to guarantee its continuation the province now demands an area-oriented approach to the developments in the area but this mainly done to strategically promote their self-interest rather than for the benefit of the whole area.

<u>Inclusive stakeholder involvement</u>

In this project a special approach to participation and stakeholder management is followed, Strategic Environs Management (Strategisch Omgevings Management, SOM). SOM aims at pro-active problem solving for one or multiple organisations which they have with their environment and at the same time stimulates a sustainable dialogue with the environment and looking for mutual gains (Wesselink, 2011). The approach helps to identify the different types of stakeholders and how to strategically address them.

SOM is very strong in identifying which parties have a stake in our project and which parties have influence on our project. Or both. Based on this distinction you start to wonder, what's their opinion and how can we approach them the best? In this way you strategically think about how to deal with stakeholders, so they cannot only take something from us but can also bring in something. And the other way around too. The process is in that way more area-oriented. You don't look solely to your own thing, you try to see it bigger, to empathize with the other stakeholders, what is their stake? How can we

strengthen each other? That in my opinion an extra value, something gets better by doing it together.' - Respondent E

As a result, the project team has made clear decisions when and how to involve certain stakeholders. For example, they choose to involve the public and some specific stakeholders only after the draft route decision is published.

'*When the draft route decision is available for inspection, we are going to inform them. We will call them and point them at the draft zoning plan. 'We want to pro-actively involve you, read it through and when you have questions, please come to one of the information meetings, or we can visit you sometime'. So that's a moment in time of which we say, the stakeholders we deliberately have not spoken to yet, we are going to involve them now in the process.'* – Respondent D

The position of the project towards the other stakeholders was clear too: we have a project to implement, that is something that has to be done, however, the way it is done is not determined exactly yet and can be influenced.

'In that we indicate, the preference decision is taken, so the capacity enlargement just has to be implemented, that is the project's goal and that is fixed… What can be changed is the way it happens. That has for example happened to the NHW, at first some persons thought of just simply blowing up the objects and that's it. Now they are replaced as 'object trouvé'.' – Respondent D

Finding a solution for the NHW object in the area has been a real quest but show signs of good cooperation. The solution of ´object trouvé´, replacing them as if they were ´thrown´ in the landscape, was not something initiated by Rijkswaterstaat but the result of the process. Several workshops were held in each other's interests and views were explored.

'We really put a lot of effort in coming together, at a workshop-level, and to explore what's behind everyone's interest, what is important for you? And how can we plan it in a way that is in line with your wishes?' - Respondent D

'We did these workshops together with a bureau that collected all the views and made the ambition document, a sort of design-quality plan of how it had to look like. They asked for feedback about the plan, do you agree with the given image? So that they all responded in writing yes, this is what we want.' - Respondent D

Although the NHW resulted in a lot of extra effort for the project, it is admitted that the involved interest parties did their job quite well, championing the interests of the NHW.

'*The RCE and the project office of the NHW are appointed about 10 years ago to promote the whole NHW, and they are doing really well, making it more difficult for us in some way, so you have to deal with it somehow*.' - Respondent C

Another way of collecting wishes and demands is the 'Client Demand Specification', an extensive document containing the wishes and demands of a broad range of stakeholders and also whether these wished and demands are granted or not. But, although through SOM the project has efficiently and strategically dealt with its stakeholders, participation is limited and reactive. It is a deliberate choice to involve the public only after publishing the draft Route Decision but it surely does not foster the community to actively join in order to improve their quality of life.

Local knowledge

The usage of local knowledge is not very extensive in this project, especially as the real involvement of the public is started after publishing the draft Route Decision. However, there are some clear examples in which local knowledge was effectively used (7). The first example is the presence of the Little Owl, a protected bird, in the area. By involving the local bird club's knowledge about the birds and the area is used and at the same time their opposition to the project is taken away as they are involved in finding a good solution for protecting the Little Owl.

'*We have had contact with the local bird club. We were going to do something which would affect also some birds. Therefore, a bureau did research on the biodiversity in the area and the local bird club assisted them in this research. In this way we involved these people and ensured we had a research done of which the local bird club agrees it was done properly.*' - Respondent C

The way how is dealt with the NHW is another clear example of how local knowledge is used. Just like the example of the local bird club, it involves mainly specific interest related knowledge, in this case about the objects of the NWH, such as their functions, construction, history etc. Involving the perceptions and specific knowledge of the stakeholders dealing with the NWH provides the project with valuable information how to properly deal with the NWH. The NHW-issue clearly shows a learning process, starting with the idea of just simply blowing up the objects, through several workshops towards the final solution of object trouvé. The appreciation of the project for the local knowledge is clearly shown by involving the stakeholders in the tendering process.

'*Since 2 – 2, 5 years we treat the NHW very differently and we also have carried out a cultural value research. In this research the stakeholders were also involved and were invited to watch with us to the interrogation. How are we going to select a bureau to carry out the research? This happened also based on MEAT, in which the stakeholders could indicate what they regarded as important aspects of a bureau and on which aspects are we going to select one? So they thought with us about the selection procedure and by involving them into your process and making them shareholder of the process they can't oppose to the outcome. As such, the process is careful, stakeholders are part of the process, it is transparent and as we don't have knowledge about cultural heritage they indicated which criteria are important. Because they thought of it by themselves they also can't question the method that was followed.*' – Respondent D.

The quote also indicates a very important aspect of involving local knowledge. By involving primarily opposing parties they bring in their local knowledge and cooperate in building a shared vision or solution. As such, their former opposition is turned into cooperation and support for the project. Both examples confirm this benefit of involving local knowledge.

Building relations

An important aspect indicated by one of the interviewees is the lack of steering to an area-oriented approach and the focus on budget and planning by their principals and the integrality of the project or chances in the area hardly come by during conversations with the project principals.

'The area-oriented approach, on the one side you see that it is being promoted in terms of lip-service, but in the steering I do not experience it in that way. What is my job? That's building a lock. All things around it are nice, but above all it may not form a risk. And that's difficult sometimes.' - Respondent C

It therefore takes some effort to convince their principals of the importance of dealing with the NWH in a proper way, which justifies the extra costs. It shows the importance of having certain people on the job. As the steering does not direct the project in a certain way, it is up to the people involved and the project team to do or not do something extra. It is also perceived this way by the interviewees.

'Y*ou largely determine your own playing field. That's a chance and a risk. So it is therefore very much dependent on the person.'* – Respondent C

'You see that every project does something with it, as you're in a certain context in an area. However, the way how is dealt with it is very much dependent on the team that's on it, the people that control it.' - Respondent C

Next to control there is another internal issue that is indicated to play a role. There is a big difference in culture between people working in the plan-study phase and people working in plan-elaboration phase. While people in the plan-study have a very broad vision and know a context that can easily change, people working in the plan-elaboration phase want to demarcate, having things in black and white and facing strict deadlines. As a project goes through both phases it is difficult dealing with both views properly.

'*There are two things that work against me. That is steering and culture. You see a very big difference in the culture between people who have always worked in the plan-study phase and people who have always worked in implementation*.' - Respondent C

Looking at the context of the Beatrixsluizen, the project features a very positive local community. The reason for this is that in the adjacent neighbourhood many (former) skippers live and there is also a boarding school for skipper's children. As a result, during information meetings the necessity of the project was stressed by some of the inhabitants and Rijkswaterstaat should proceed quickly. When

looking at the relations with the municipality and the province we witness an important role for self-interest. The lock expansion and canal widening project was initiated in reaction to the municipal plan to build a business park. The province had the wish to develop an inland port. In order to ensure its realization it wanted to hook on to the other developments in the area, slowing down the decision-making process of the Beatrixsluizen and setting a total area-development as condition to sign the administrative agreement. The inland port has therefore always been seen as a risk for the project. Partly because it started to play a role in the later stages of the project, but also because it would make the project much more complicated in many ways.

'*We did see it as something that formed a risk to our project*' - Respondent C

The relation with the municipality and especially the development of the business park is different. It is perceived as a risk by many, but they do try to see it as a chance for both projects and it is also expressed in this way.

'*We try to pretend as having profit from one another, but if you ask people sincerely, they feel it more as something that makes it more difficult. However, you try to have the stance not to experience it in that way but that you jointly want to come to a good solution*.' - Respondent E

The difficult point is nonetheless the money. The intentions are good, especially when talking globally, but when it comes down to who's going to pay the discussion hardens again.

'Generally we are jointly involved in the projects, but you notice that when you start coming to a certain point when it is about the money, the finger is easily pointed at the other. As long as you are in the phase of the ambition document and you are talking about the outline of design, then it's all fine and jointly done, but when you start going towards the financial aspect then the attitude hardens and is it more of, in the end you of Rijkswaterstaat want this or finally you of the municipality want that. You try to find good solutions through cooperation and good manners, but the reality proves to be more unruly than that.' Respondent E

5.1.c. Conclusion

Although its spatial impact is limited, the developments in the surrounding area and the relocation of the NHW provide enough incentives to follow an area-oriented approach. Constructive cooperation with the municipality has indeed resulted in some win-win's but cooperation with others is mainly based on the promotion of self-interest. Opportunities to create extra value are found but are not executed as no one wants to take ownership of it and the project's budget is under pressure as a result of budget cuts. The project effectively deals with potential threats to the project, especially shown through the NHW issue. The collaborative process of searching for a way out has led to a broad supported solution. Through the use of SOM the project deals strategically and efficiently with its stakeholders but therefore also takes a very instrumental approach to participation. As a result, the project has ensured its continuation but is far from integrated and extra value is hardly created.

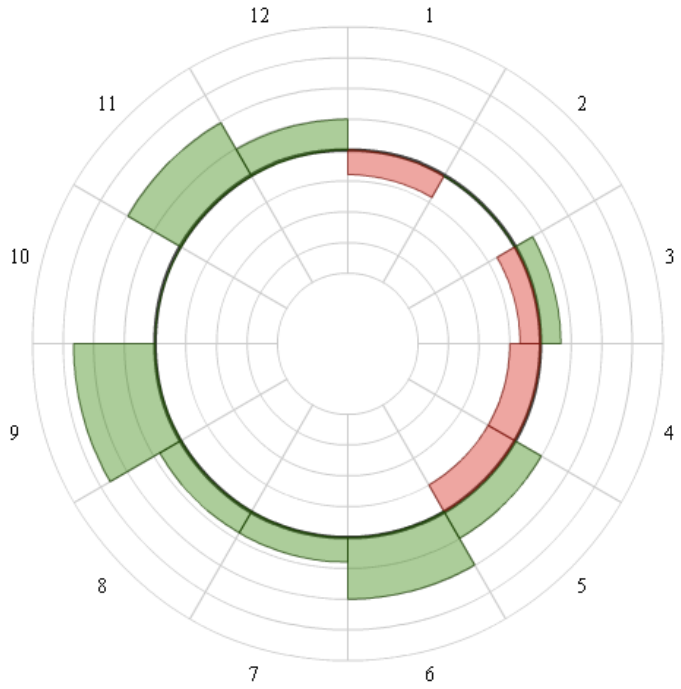
5.2 Sluis Eefde

Sluis Eefde is the entrance to the Twente Canal, connecting the Twente region with the IJssel River. Construction of the lock was finished in 1933 and the lock has recently been in the news as it was closed for over a month when one of the doors fell down. It is a busy lock and the only entrance to the Twente Canal. Already in 1990 the lock was indicated as a bottleneck (Prioritering Scheepvaartprojekten, 1990) and as the delays due to the lock exceed the 30 minute maximum the lock is being expanded with a second lock chamber. In February 2012 the Minister of Infrastructure & Environment made a Preference Decision for the location of the second lock chamber and currently the draft zoning plan/EIA are available for inspection and objection. Construction is expected to start in 2016 with the project finished in 2018-2020. Just like the Beatrixsluizen it will feature a DBFM-contract.

With the support of the national government, the province and the European Union a strong programme is developed in the past years to revitalize water-related business parks in the region of the Twente Canal (Verkenning capaciteitsuitbreiding 2007). Furthermore, Rijkswaterstaat is currently widening the Twente Canals to facilitate CEMT-class Va ships and Sluis Eefde is part of this upgrade. The project features an interesting environment. It has a committed community with a very active village council and a municipality with an alderman for sustainability. Next to that, Rijkswaterstaat has promoted the project as a small-scale area-development which enlarges the recreational value of the area and the lock would be 'the most sustainable lock of the world'. An initiative has been set up, 'Highport Eefde', to revitalize the community of Eefde. It is initiated by the innovation department of Rijkswaterstaat and the local municipality, the village council and inhabitants participate.

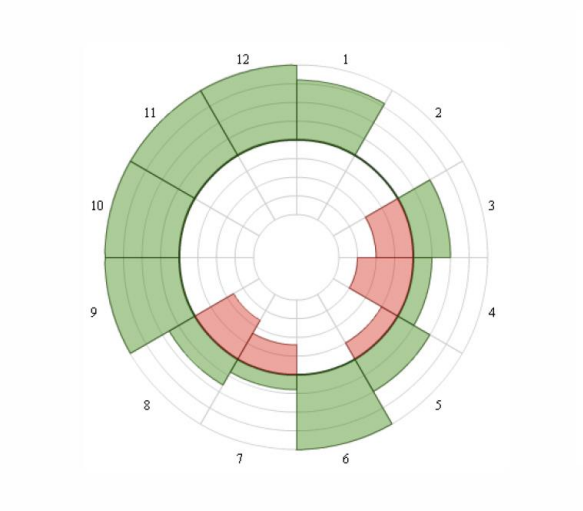
Figure 18: overview of Sluis Eefde (Bierman Henket Architecten, 2013)

5.2.a. Omgevingswijzer

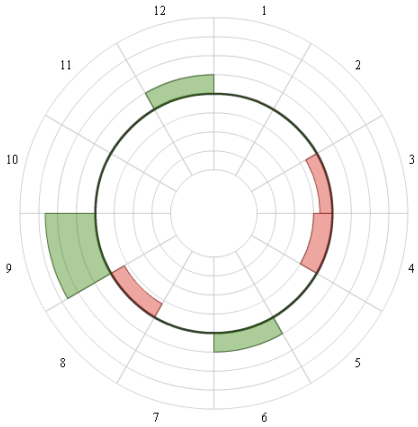


Legend	
Nr.	**Aspect**
1	water
2	subsoil
3	energy & materials
4	ecology & biodiversity
5	use of space
6	spatial quality
7	social relevance
8	welfare
9	accessibility
10	investments
11	economic attractiveness
12	public attractiveness

Figuur 19: Omgevingswijzer of Sluis Eefde



Figuur 20: Omgevingswijzer of respondent F



Figuur 21: Omgevingswijzer of respondent G

Explanation to the figures 19-21, the complete questionnaire of figure 19 can be found in annex IV.

The expansion of the lock complex shows only minor negative effects. Main causes are the replacement of a Rook (birds) colony (4), the enlarged draining of the canal (1), the high emissions due to digging during construction (3), and the destruction of three houses near the lock (5). The extra draining of the canal due to a second lock results in extra pumping to keep the canal at its level, resulting in higher emissions and energy use. The most important benefits are logically attributed to an improved accessibility of the canal and the adjacent ports (9) and the resulting improved economic attractiveness of the area (11). Concerning transport, benefits are achieved as the lock extension stimulates multimodal transport and the reliability of the transport systems improves as the lock complex will have two lock chambers (9). Other positive results are due to the use of local knowledge and the incorporation of some wishes of the local community (6 & 7), the improvement of safety standards of both the canal and the crossing road (8), and the improved attractiveness and experience of the lock complex as it is enlarged (6). An interesting initiative is the idea to set up a learn-and-work program to educate local young people during the construction of the lock (12). This was also done during the construction of the first lock in 1933. It is not sure yet whether this program is indeed executed but Rijkswaterstaat is at least willing to cooperate and to explore the possibilities.

When comparing the Omgevingswijzer to the two respondent versions, we see many similarities with figure 21 and very few with figure 20. This can be explained by the fact that figure 20 was the result of someone who was involved in the early stages of the project, while figure 21 is from someone currently involved. The difference clearly shows the ambitions of the project in the early stages. The main ambitions were the reduction of water loss, the construction of a sustainable lock ('the most sustainable lock in the world') and the integration into the landscape. Most of these ambitions have not survived and the sustainability ambition has been seriously downgraded. The reduction of water loss would go at the expense of the passage time and was therefore cancelled. Especially the Highport initiative shows where the project could have performed better. Although some local wishes are incorporated, the project does not contribute to a revitalization of the village, while there is a demand to do so and ideas are available. So, although the project shows minor negative effects, the positive effect of the project is limited too, while there have been serious chances to enlarge the positive effect.

5.2.b. Institutional Capacity-building

In the following paragraphs the organizational arrangements are considered by looking at the five aspects of institutional capacity-building. Some of the findings have a direct relation to the spatial-functional dimension of the project and the numbers in the text refer to the aspects of the Omgevingswijzer as shown in figure 19.

Integrative place-making

The economic aspect of the lock expansion is clear; it improves the passage of ships and therefore stimulates the economic development of the region around the lock and the Twente region (OBP/Mer 2013) (11). However, Rijkswaterstaat's ambitions were bigger than that, as for example can be read in a newsletter published by Rijkswaterstaat in December 2011: '*the ambition is to build a sustainable lock and to contribute to a high quality environment. The support of the local community is an important issue and the lock will remain the local landmark*'. For the location of the lock two realistic options were available of which the northern option is chosen, which is more harmful to a Rook colony (4) and three adjacent houses (8) but which also costs 20 million euros less. With the argument of small-scale area-development, the improved attractiveness of the lock complex and safety improvements the local municipality is persuaded by Rijkswaterstaat to support the northern location (Letter to Mr. Bussink, alderman of the municipality of Lochem, d.d. February 16, 2011). The municipality of Lochem focuses in its future vision on enlarging its tourist attractiveness and specifically mentions the locks as part of this strategy and the extension of the lock offers chances for the village of Eefde (Gemeente Lochem, 2012). Furthermore, due to the expansion the lock and the village become more connected. The expansion is linked to a large package of developments focusing on tourism, recreation, catering and energy extraction. To achieve this, an approach is followed in which participation and co-creation play a vital role (Gemeente Lochem, 2013). It clearly shows the willingness of the municipality to join in the development of the second lock and use it as a motivation to improve the attractiveness of Eefde. Improvements are desired as there is currently limited space for recreation around the lock, a busy road is crossing the lock and the area's accessibility is limited too (Kauffmann, Kersten, Noordhuizen, Weenink, & Hoofwijk, 2011).

The Highport initiative has resulted in an intention statement in which a number of developments are listed. In this statement Rijkswaterstaat commits itself to a number of actions, such as realizing its nature compensation around an existing stream, the construction of a look-out point next to the new lock (7) and facilitating a number of other developments, such as exploring the opportunities for a learn-and-work program during the construction of the lock (12). Furthermore, in the ambition document the visions and images of several stakeholders are translated into an aesthetic document, presenting a clear visionary image of the new lock complex (6).

However, the figure of Omgevingswijzer presents a less positive image than one the above mentioned developments suggest. The sustainability ambitions are downgraded and water saving measures are cancelled as they go at the expense of the functionality of the lock (1). Other initiatives such as a new marina or catering facilities on the lock complex were rejected too. Some ideas, such as hydropower generation (3), are left to other parties to develop. One of the reasons indicated by the interviewees is the lack of money. Due to budget cuts their project's budget is under pressures and the project's principals focus on the scope.

'*Eventually it about the money you have available to build something*' – Respondent F

'Staying within the scope is important and other things are just ornaments, we are not here to be sustainable but to build infrastructure' – Respondent F

Next to this, the interviewees indicated to have difficulties with the exact role of Rijkswaterstaat. They stress the importance of involving the local community and their demands and wishes and to overcome resistance. But in the end they have the job to solve the bottleneck and they do not see it as the task of Rijkswaterstaat to be the initiator of an area-development

'*The difficulties with these kind of things is that we as Rijkswaterstaat are not an area developer*' – Respondent G

The project however featured integrative place-making in the first place. The sustainability ambitions presented a strong imagination for the future lock and surrounding area, uniting several stakeholders (7). Furthermore, as the local community participated they were able to actively shape the local identity of Eefde and were able to influence the local politics and agenda setting, for example through the municipal future vision. As there are several other local initiatives attached to the revitalization of Eefde the future vision is still largely intact, but the lock expansion is currently only limited part of it.

<u>Collaboration in policy making</u>

Collaboration in policy making is clearly evident in this case. As the project is not following the Infrastructure Act but the Spatial Planning Act, the zoning plan has to be changed and approved by the municipality, making the project directly dependent on the municipality. Cooperation with the municipality is generally good, especially as they are positive about the project and see it as an opportunity to vitalize the community of Eefde. Due to the dependency on the municipality, the tendering can only start when the zoning plan is accepted. The consequences of such dependency were clearly shown recently. Rijkswaterstaat was stopped by the municipality to move the Rook's nests as the zoning plan was not accepted yet. Rijkswaterstaat can continue to move the colony but is not allowed to take irreversible measures until the zoning plan is approved. This dependency is somewhat unusual for Rijkswaterstaat and is also felt in this way.

'*We take more account of other things but every now and then we still really like to play the big boss that decides. And we find it very strange when that's not possible, feeling a bit disappointed*.' – Respondent G

The province of Gelderland is much less involved as it has no direct interest in the project, the canal is mainly serving the province of Overijssel. Both the province and the municipality, as well as other regional governmental bodies, are represented in the project's steering committee. Other stakeholders involved include the ports of Amsterdam and Rotterdam, the skippers association Schuttevaer and the Container Terminal Twente (CTT). An agreement was signed with local transport businesses in which they stated to transport more of their cargo via the Twente Canal (11). An interesting collaboration has

been set up with the local bird club. Their resistance to the project due to the removal of the Rook colony has been turned into cooperation by moving the colony in a proper way (7).

'*When you actively and openly approach them and tell them 'listen, this is the project and we understand you do not like at all, but if we want to move forward we will have to find a solution. Are you prepared to think with us about such a solution?' If you bring it in this way, they are probably indeed prepared to cooperate*.' - Respondent F

An interesting aspect is the Highport Eefde initiative. The ones involved in this initiative are for example the municipality of Lochem, the province of Gelderland, the village council and the Water Board. As the village faces two large future infrastructure projects (lock expansion and a new ring road) the village council preferred to have a pro-active say in the developments, instead of taking a reactive position (Kauffmann et al., 2011). Rijkswaterstaat is also involved in the Highport Eefde initiative, but mainly from outside the project's team, and mainly by the innovation department of Rijkswaterstaat. Therefore, the position of the project team towards this initiative is somewhat distant. They question the relevance to their project and risks that it might bring. They therefore did not feel a sense of ownership of the initiative.

'Highport; much talking but what does it bring the project? It is good that it has been set up but it's not relevant for my project.' – Respondent F

'On a certain moment, I thought, this was going that far that I started to question whether it would make my project more feasible? Or would lead to cost reductions? Or whether it would save time? My presumption to the answers of these questions was no. It's a good way to raise support, starting a conversation is ok, but do not try to use the project as a sort of lever to realize a whole range of other developments in the area. That is too ambitious and you drag too much into your project. That is in my opinion the risk of area-development.' – Respondent F

Despite the doubts of the project team, the initiative has led to the signature of an intention statement, guaranteeing several initiatives to be implemented. Rijkswaterstaat's hesitation makes that it is mainly facilitating other initiatives, but it has also committed itself to some small-scale actions. For example, it has left the development of extensive recreation in an area close to the lock complex to the responsibility of the municipality and the village council. Other results of the collaboration in the plan-making included the ambition document and the retrieval of so-called 'client demands' of involved stakeholders. In the ambition document frameworks are set for the functional, sustainable, landscape, monumental, and architectural qualities of the lock. The document is very detailed and shows the importance Rijkswaterstaat attaches to a decent integration of the project (6). However, the high level of detail can also limit the freedom of the contractor to bring in innovative ideas. The document is the result of an intensive design research in close cooperation with Rijkswaterstaat, municipalities, stakeholders, Highport Eefde and architects. The ambition document presents a set of wishes and demands, mainly focusing on the spatial quality of the project. Both the ambition document and the Client Demand Specification are taken into consideration in drafting the contract.

An issue that has played in this project is that the project was given a low priority and has featured several postponements. This low priority is conflicting with the high capacity demands of collaboration. So although there has been more than enough time to cooperate, the project has been underinvested considering capacity.

'*We did what was necessary, but you see when the capacity is limited you have to make even more choices. The question then is how much you can contribute to all sorts of ambitions that arise in the local community.'* – Respondent C

Inclusive stakeholder involvement

In this project a stakeholder analysis has been carried out based on the degree of power and interest, and on agreement and trust. It awards much power and interest to the region, the administrator and the CTT. The local community and the village council also score above average. Also, it is interesting to see that there is a bigger trust in the village council than in the Highport Initiative of which Rijkswaterstaat is one of the contributors. Based on the stakeholder analysis, a strategy is assigned to every type of stakeholder, varying between informing, monitoring, keeping them happy or manipulating them. It clearly reasons from the project's perspective and is mainly risk-oriented. The public is involved in the project after the preference alternative (a second lock chamber) is chosen. It clearly takes the stance of there is something that has to be done, constructing a second lock, and something that can be done, which can be wishes and demands of the local community. Ideas could be brought in via various ways, which the local people enthusiastically did, and a so-called Sounding Board was erected with representatives from the local community.

'*Really interested people could sign up for the sounding boards; a limited group of 15-20 persons who every now and then had meetings*' - Respondent F

The ideas that were brought in were seriously considered and the technical manager sometimes visited the creators of these ideas. Feedback was also given on the submitted ideas whether it was being adopted or not. Next to this, the Highport initiative and other stakeholders, as well as the Sounding Board were involved in the drafting of the ambition document. Through the ambition document and the Client Demand Specification wishes and demands of stakeholders are collected and play at least some role during the tendering process. The Client Demand Specification for example includes an extensive list of technical demands of skippers association Schuttevaer. Furthermore, the local bird club was invited to help in finding a good solution of the Rook colony. However, this is where it stops. The consultation of the public has been executed quite well but it does not take the next step towards real participation.

'*No, the local community does not take decisions. With all the respect, but the Minister decides.'* – Respondent F

Also, the high ambitions have resulted in high expectations about the project. However, now it seems that the level of ambition has been seriously downgraded, the project team has to invest a lot of energy in expectation management, but once settled these ideas and images about the project are difficult to erase.

Local Knowledge

Local knowledge (7) plays a special role in this project as there is a strong metaphor that represents the image of the local community.

'There was a man in the room who said, 'when people go on holiday to Lochem and its surroundings they send a postcard of the lock at Eefde'. The postcard of Eefde, I found it very striking, and that's why it is so important to organize these community meetings. As people said, Eefde is the lock. Nationally is Eefde unknown but it's known from the lock. That man asked 'how is our new postcard going to look like?' That made me think, that is in a nutshell very well caught where it is about.' – Respondent F

The idea of changing the postcard of Eefde and therefore its identity can be regarded as an eye-opener for the project team. The metaphor has been adopted and is included in the ambition document and even the EIA. The project shows an awareness of the local values and images of the location and the project. The ambition document mainly focuses on the spatial design and the new lock may not reduce the monumental character of the existing lock. The usage of the local knowledge could have been improved if the local community was directly involved in the decision making by for example setting conditions for the tendering process. There is however a clear example of the usage of local knowledge. The local bird club became involved to bring in their knowledge about birds and the area and to use it by making a plan to replace the colony. Not only their knowledge was used, but by cooperating they turned from opponents towards proponents, submitting even ideas to improve the natural qualities of the lock complex.

Building relations

While trying to convince the municipality for the location Noord, Rijkswaterstaat uses the argument of a small scale area-development. It would enlarge the recreational value of the area, improve the traffic safety and it would be a sustainable project. In this same letter of February 16th, 2011, Rijkswaterstaat states that no resistance of the directly affected inhabitants is to be expected. However, currently the relationship with the people living in the three houses next to the lock complex that have to be demolished is not good. They are very emotional and fanatical and it puts a serious burden on all the other things that are done in the vicinity of the lock, according to one of the interviewees. It is difficult to point at a reason for their anger but Rijkswaterstaat seemed to have underestimated the issue. As a matter of fact, the inhabitants of the three houses are currently actively protesting, with success, and use the Rook colony as an argument to stop Rijkswaterstaat. It is threatening the project's progress and forms a clear example of how issues can escalate.

'At Eefde we have a far worse relationship, we got three families that have to be expropriated and we have a bad relationship with them. And you see that it puts a huge mortgage on everything else we do in the area. We are doing the best we can to improve the relationship but you notice that it is not going well.' - Respondent C

Figure 22: protest signs at Sluis Eefde **Figure 23: artwork symbolizing the cooperation in Eefde**

One thing is clear in this project: the local community is very concerned with the project and is mainly positive. A questionnaire revealed that 59% of the inhabitants regard the lock as a characteristic feature of Eefde (Kauffmann et al., 2011). This can also be deduced from the large amount of submitted ideas and wishes. There is a good relationship with the municipality of Lochem and the project receives a lot of media attention. A good thing, according to one of the interviewees, it keeps you focused, but it brings also something new to the job.

'If this project was done 10 years ago, the people probably wouldn't have found the media that easy and the media would not have leaped onto it as it now does. So that's a real change. Moreover, in the benefit of the project because, in my opinion, you eventually build better things. You are pushed to do more. But, the process can therefore also take longer.' – Respondent G

The Highport initiative has been a struggle for the project team but they stayed involved and with the intention statement the initiative has led to some concrete actions, with as highlight the joint erection of an artwork next to the lock complex as a symbol of cooperation. A very important aspect concerning dealing with the local community was the open attitude and transparent communication, for example by giving feedback on submitted ideas. This will clearly have helped to maintain the good relationship with the local community. However, the project is far from finished and it is imaginable that it will end in some sort of deception as the project only partly meets the high ambitions once announced. Especially the operator will be affected as it may not get what was promised and he has to deal with a disappointed environment when the project is finished.

'From the side of Rijkswaterstaat, my opinion is as being involved in this project, when we do these kind of projects with innovative ideas in the field of sustainability and involving other interests, which is surely a good thing, but we should very carefully consider how far can we go and can we really do what we say? Are we not going to build castles in the sky and disappoint a lot of people afterwards? Because the innovation center of Rijkswaterstaat does not suffer from that as it moves on to another project, we

suffer a bit from it as we have to make sure the project is finished, but the operator seriously suffers from it'. – Respondent G

In this case the relation with the environment is not of concern but the internal relationships. Especially the Highport initiative has divided the project team seriously. The Highport initiative was initiated by the innovation department of Rijkswaterstaat and supported by the technical manager of the project but not by the entire project team. As we have seen, the focus on budget and planning made them question the contribution of the initiative to the project. Eventually not the right people were convinced of the extra value of the Highport initiative and full participation in the initiative was diverted. We can identify a network between the innovation department of Rijkswaterstaat, the alderman of sustainability of the municipality and the village council of Eefde, but the project team is not fully part of this network. It is partly for these reasons that the project's ambitions have not been fully fulfilled.

5.2.c. Conclusion

Although it is 'just' the expansion of Sluis Eefde with a second lock chamber, the context of the project provides various starting points to work according an area-oriented approach. The initial signs give an impression of the ideal recipe for a successful area-oriented infrastructure development: a concerned community with many ideas and wishes, a cooperative municipality with the wish the revitalize the village and stimulate recreation in the area and a project with high ambitions. That this is not a warranty for success was proven by this project. The focus on the scope (budget and time) by the project's principals divided the project team and eventually led to a distant attitude to the many initiatives in the area and the cancellation of many of the ambitions. As a result, the project features eventually very little and only minor measures and additions that create extra value and the project is far from integrated. It takes a backward stance, only facilitating others to develop the existing initiatives. It is thanks to a collaborative initiative, Highport Eefde, that some of the initiatives are being implemented.

5.3 Zuid-Willemsvaart

Already in 1982 the Zuid-Willemsvaart was appointed as main waterway and therefore deserved an upgrade. As the existing route intersects the city center of Den Bosch, upgrading this section would be difficult and a bypass was therefore a possible alternative. The first ideas for this bypass date at least from 1978. By building this bypass, the canal is not only upgraded and facilitates bigger ships (CEMT-class IV), it also relieves the city center. The fact that in the past decades very few canals are constructed in the Netherlands makes it a very unique project. The Traject Nota/ EIA were published in 1996, which was followed by a regional standpoint of the regional governments, in which they pronounced their preference for the 'Most-Environmental friendly- Alternative', combining the canal with an ecological connection, and some minor route changes. This standpoint was accepted by the minister and after some revisions the definite Route Decision was signed in 2011. To secure the intergovernmental agreements a covenant was signed in 2007. In this covenant the municipality of Den Bosch and the province of Noord-Brabant also declare to take responsibilities for the implementation of the ecological connection and all parties declare to co-operate in the project and to show commitment. The project is currently under construction with completion expected in December 2014.

Despite that the route is already known for quite a while and the area it occupies is largely free of buildings, still more than fifty buildings have to be demolished (Route Decision 2008). Furthermore, the project lies in between two densely populated areas, the cities of Den Bosch and Rosmalen, runs parallel to the A2 highway and intersects with the A59 highway and a railway. Next to this, several regional roads cross the canal route, as well as some waterways, including one that is being extended to enlarge its drainage and storage capacity. The project's spatial impact is therefore large, with all the consequences.

Figure 24: construction of the new bypass and the Graafsebaan (Rijkswaterstaat, 2012b)

5.3.a. Wheel of Synergy

Figuur 25: Omgevingswijzer of the Zuid-Willemsvaart

Legenda	
Nr.	**Aspect**
1	water
2	subsoil
3	energy & materials
4	ecology & biodiversity
5	use of space
6	spatial quality
7	social relevance
8	welfare
9	accessibility
10	investments
11	economic attractiveness
12	public attractiveness

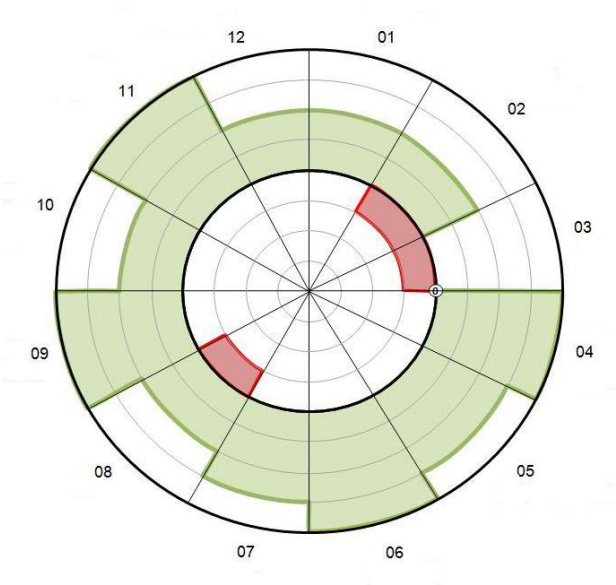


Figure 26: result of an Omgevingswijzer-session on 15 March 2012 (Rijkswaterstaat & Arup, 2012)

Explanation to the figure 25-26, the complete questionnaire of figure 25 can be found in annex IV.

The Omgevingswijzer in figure 25 shows negative impacts concerning water (1), subsoil (2), energy & materials (3), and ecology & biodiversity (4). Being a large new waterway, its hydrological impacts are extensive. At the same time it also offers opportunities to improve the water system, but improvements are hardly encountered. The seepage effects indeed influence a large area, slightly mitigated by a new stream. Its impact on natural values is big too, especially damaging flora in the floodplains and affecting the badger population. On the other hand, an ecological connection is made between the floodplains and the river Aa via a new stream, the Rosmalense Aa, that runs parallel to the new canal. Subsoil (2) scores negative because it intersects a mound but also as it let's go the opportunity to get rid of severe soil contamination, situated in the floodplains. The aspect of social welfare (7) has a neutral score as the barrier function of the city center section of the canal is decreased, but the new canal section produces a new barrier between Rosmalen en Den Bosch. Furthermore, there is some support for the project but the project also features some fierce opponents. The project improves the accessibility of the canal (9) and therefore improves the economic attractiveness of the area (11), but since a business park in Den Bosch is not extended with canal-oriented businesses alongside the canal, this aspect could have been better. Concerning accessibility (9), there is a slight negative effect because of the barrier effect, but again, this is decreased in the city center, which improves the traffic safety too (8).

Comparison between the two Omgevingswijzers reveals some similarities and many differences. In this case it is more difficult to compare the two figures, as the second figure was made during an earlier session in March 2012 as part of a pilot-project of the application of the Omgevingswijzer. This was during the development phase of the tool and questions and mechanisms might have slightly changed. However, the focus of spatial quality, natural values, accessibility and economic attractiveness can indeed be witnessed in both figures, although the negative effects on nature are probably overlooked. The other aspects are remarkably positively scored, in contrast to what was found in project documents. The reason for this is unknown but a positive attitude might have influenced the results.

5.3.b. Institutional Capacity-building

In the following paragraphs the organizational arrangements are considered by looking at the five aspects of institutional capacity-building. Some of the findings have a direct relation to the spatial-functional dimension of the project and the numbers in the text refer to the aspects of the Omgevingswijzer as shown in figure 25.

Integrative place-making

As the project has a relatively big impact on the surrounding area, a decent integration has always been a point of concern. For example, the following quote is from the trajectnota/EIA of 1996:

The task is, despite the different interests and choices (traffic engineering accountability, economic development potentials, nature protection), to fully integrate spatial quality as an aspect of the decision-

making process. The confrontation between city and nature becomes more and more apparent. Translated to the area of the bypass or conversion zone of the improved Zuid-Willemsvaart, the planning's task is to jointly develop urban and non-urban functions in order to capture the extra value of a responsible integration of city, nature and infrastructure. (Ministerie van Verkeer en Waterstaat, 1996)

At the same time, the report also points at the joint development and the consequences of failing:

The chances of combining the functions of living, working, recreation, transport and nature are only taken with a proper ordering and control on the use of the area. The waterway operator can only influence the waterway and the adjacent banks within the project's area. Outside this area the responsibilities are with other governments. When no decent integrated approach is taken, the combination of functions can turn into a threat. (Ministerie van Verkeer en Waterstaat, 1996)

More plans, such as the municipal future vision, stress the importance of the project's integration and the TN/MER of 2004 ascribes high scores to the potential for combining functions and positively transforming the area. This same awareness can be witnessed by the project team. They seem to be aware of the project's impact and have the desire to develop a project that meets everyone's interests.

'You're going to rearrange the area there anyway, why don't make it in such a way that the whole region of Rosmalen and Den Bosch gets a new and beautiful area? And we had that chance, thanks to a very good future vision' - Respondent H

'The local people, they didn't ask for the whole project, it is imposed to them, forced, and they are affected in their own environment, in their home environment often. For businesses it is different of course, but speaking about inhabitants, they are affected in their home environment where one should find peace and safety. So you have to take that really serious and deal with it very carefully. In my opinion we've always tried to do that in the best way we could'. - Respondent I

The regional governments also show commitment to the project by taking a standpoint in which they pronounce their preference for the most-environment-friendly-alternative and propose some connected developments in the area. It is even stated in the minister's standpoint of 2006 that the project is probably not feasible on the mid- and long-term but offers very good chances to improve the spatial quality of the area, which therefore justifies the project. All together this seems to be the ideal recipe for a well-executed area-oriented infrastructure project, however, this not just simply the case. When one looks at the Omgevingswijzer, the image also does not reflect this.

The project is presented as a visionary plan, combining a canal bypass with an ecological connection and canal park (5, 6). The canal and park form a green-blue barrier between Rosmalen en Den Bosch and in the area between the canal and the A2 highway a new urban hub arises with new offices, houses and railway station. The plan is indeed in some way visionary but there are some remarks. First of all, the public is limited involved and the plan mainly experts-based. The project of the urban hub is postponed and several ideas and initiatives to create extra value are not executed. There have been attempts to

search with the municipality for possible developments to attach to the project but this proved to be frustrating as in the end there appeared to be no money for these developments.

Also, the ecological connection is the pride of the project but this was actually something the involved parties were obliged to do. It stems from the municipal future vision and for the EIA-commission it was an important prerequisite for the continuation of the project. Following the signed covenant of 2007, the province and the municipality of Den Bosch were responsible for realizing this ecological connection. As a result, the ecological connection is indeed implemented but at a very marginal scale, especially as widening the zone would require costly bridge extensions (4).

Another cost-related issue is the heavy soil contamination in the floodplains. The project offers a good occasion to get rid of it and would be a true public benefit. However, as no party was prepared to pay the contamination is now sealed to prevent it from spreading and is left for future generations (2).

'*What they did is just putting sheet pilings around it and covered it up. And yes, it is left for future generations. That's not very nice of course*.' – Respondent J

Furthermore, the area-oriented approach is frustrated by the existence all kinds of narrowly focussed funds. For example, as the noise levels of passing trains did not meet legal standards in the first place, it was not possible to fund noise barriers while the hindrance was clear. There are however also multiple examples of cases where the project does manage to incorporate wishes of other stakeholders or the local community. The project has been very flexible to adopt these adjustments. A clear example is the widening of a fly-over of the Province. They decided last-minute to have it widened in order to be future fit since the road is nominated to become a national highway. Incorporating their wish is a public interest as it saves future costs and hindrance, but demanded a change of the Route Decision, something that requires the Minister's signature. Being flexible is not always easy and to the opinion of one of the interviewees the project was actually too flexible.

'What made it difficult though was the fact that we for a very long time, too long in my opinion, have been open to adjustments in the project's design. For wishes from the local environment to improve and to embellish the design. And that has led to much discussion within the project team and with the contractor.' – Respondent I

Preferably one wants to know all the existing wishes and demands in an early stage, to prevent last-minute changes. However, it is not possible to blame the project of not trying sufficiently to collect these wishes and demands, as these wishes and demands are mainly expressed as plans become more concrete, in final stages of the projects.

Remarkable is the fact that while there are several large developments going on in the area, they are mainly not in sync. The widening of the A59 highway is already completed (2010) and a new urban node, AvenueA2, will not be implemented in the coming years while the extension of a business park with canal-oriented businesses is almost completely out of the picture. Both business park developments have at least since the TN/MER of 1996 been mentioned as alongside developments and the business

park extension was even part of the covenant of 2007. Having said all this, the idea for a bypass of the Zuid-Willemsvaart at least dates from 1978 and the project has been temporized several times. Alignment of planning therefore proves to be difficult.

Collaboration in plan-making

Collaboration in policy making was inevitable in this project. It has a relatively large spatial impact and affects quite some other developments. The ecological connection is a prerequisite of the project but cannot be executed by Rijkswaterstaat and close collaboration with the municipality is therefore crucial. But, it was a laborious cooperation between Rijkswaterstaat and the municipality of Den Bosch, hampering the area-oriented approach of the project. There are several reasons for this difficult cooperation, starting with money. It was felt by the interviewees as if the municipality tried to get as much out of it as possible, trying to get as much favourable adjustments done by Rijkswaterstaat as was possible. It is in line with a well-known metaphor about Rijkswaterstaat; as the party with a big pile of money. Such attitude of the municipality does not foster a cooperation based on trust and therefore causes Rijkswaterstaat to take a more hostile attitude.

'And such an attitude [of the municipality] determines in many cases your attitude of bringing back everything we intersect and nothing more than that. That sounds easy but that is not always the case and it is difficult to display that in your design and to strictly separate things'. – Respondent J

On the other hand, Rijkswaterstaat initiated an area-oriented approach and a search for extra value, but it did not bring in extra money, something which was not understood by the other stakeholders.

'You have to play the game. But you need to bring some money too. And that's a pity I think, Rijkswaterstaat doesn't say in such a case we bring in some extra money. We do say that area-oriented development is important but that mainly considers, or that is at the moment the case, that we should know the craft of it, but bringing money is something different. And that has to do with the agreements about how Rijkswaterstaat is controlled, because it is an executing organisation that gets it funding from the DG Ruimte (Directorate General of Spatial Planning) and when they do not want to spend money on these things… In times of budget cuts there nothing as difficult as doing these kind of processes together.´ - Respondent H

Next to that the municipality was sort of dragged into the project and especially the ecological connection was something they were obliged to do. They therefore did not share the same enthusiasm and vision as Rijkswaterstaat. As a result they did not show ownership of the total area development.

'*I think that, especially in the beginning, they not felt owner of the plan. Even though, for me, they invented it themselves. What they did see was that it was their turn to develop that area*.' – Respondent H

‘*The municipality already had to pay a lot for the canal. In the covenant, which is always about money, they had to pay for example for the widening of the bridges in order to make room for the ecological connection. That ecological connection was forced upon them by the national government.’* - Respondent H

In order to increase the pressure on the municipality to take up the development of the area the project team organised workshops with other stakeholders and regional governments to get broad support for the project.

‘*What I then did, together with a bureau I organised a workshop with all the local partners. I thought when I don’t get the municipality along with me I’m going to broaden it so that when other partiers say we think this is a good idea, there are a number of other actors that can address the municipality on the issue so they will have to cooperate. The result was a very small folder with elements in it from the municipal future vision but also an image of the chances that were present in the area to develop. And that workshop has done something because after it the strategy director of the municipality asked for an appointment.’* - Respondent H

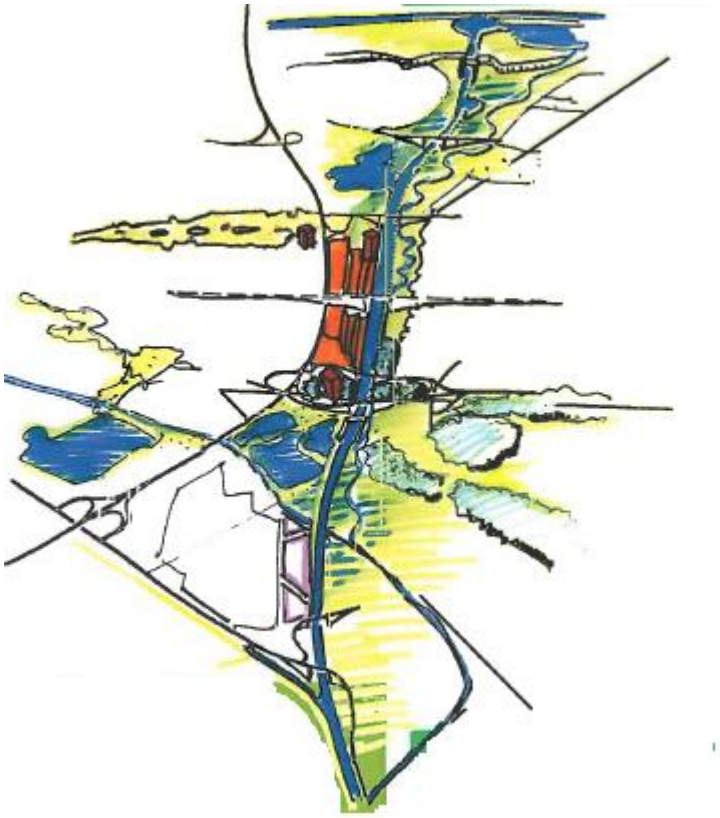


Figure 27: result of one of the workshops (BVR, 2008)

Eventually cooperation is somehow established with the municipality and despite some bumps had to be taken, it did proved to be fruitful in some cases. Although being a prerequisite for the project and an

obligation for the municipality, combining funding for the ecological connection eventually delivered a win-win situation.

'*It is the same task actually. It is financed by the municipality of Den Bosch, but we have to do some nature compensation and part of that is taking place in the ecological connection zone and therefore we also contribute to that connection. We had to finance that compensation anyhow.*' – Respondent H

And there are more examples of fruitful cooperations, also with other stakeholders. The course of the Graafsebaan, a road that crosses the canal, is changed and now features a curve to meet the inhabitant's wishes. Also, the owners of an estate felt threatened by several developments so a joint agreement was signed to align developments and to secure the estate's existence. What can be learned from the cooperation with the municipality are some conditions that have to be met in order to jointly cooperate in an area-oriented development. Both parties have to share the same vision and priorities and have to assign enough capacity to the issue. Furthermore, it requires a long-term effort to bring things to a good end. That these conditions were not fully met was shown by one of the interviewees.

'You actually as a responsible authority for the canal want to be overcharged with questions from them [the municipality]. That did not happen at all. Overcharged with questions yes, in terms of you do all the work.' - Respondent H

'It was not their main priority. The people I was talking to, they didn't realize the complexity of such an area-development and also did not know how to deal with it. I can remember that one of the civil servants said, but, what are we going to do? Tell me it, what is it more than a canal with bridges and tunnels? What is it more?' – Respondent H

´I once spoke to the director of strategy, he did understand very well what I meant. But he said, we are busy on the other side of the city, it is just difficult, and we actually haven't got the people for it.' - Respondent H

Inclusive stakeholder involvement

The project team's awareness of the project's impact led to an open attitude towards the local community: listening to their wishes and trying to incorporate them. The curve in the Graafsebaan is a good example. Another good example is an issue with noise barriers along the railroad (8). Due to unrealistic prognosis of the railroad operator, noise barriers were not legally required. Efforts of Rijkswaterstaat forced the operator to come up with a new prognosis which indeed justified noise barriers. As a reaction to Rijkswaterstaat's efforts the citizens withdrew their formal objections. Other major changes to the project in reaction to wishes from the local environment include the relocation of Sluis Berlicum as far north as possible to limit changes of the groundwater level of a nearby estate, and to enable cyclist to cross that same lock (7). Furthermore, the project regularly organizes with the contractor sounding-board meetings, which receive much attention as people are very curious about

what is taking place. There is also a collective information centre, representing all the involved governments and which receives many visitors.

'The area-oriented approach made it easier in the sense of being open to the local community and focussing on communication, which we really tried to do. In the periods of the draft route decision and the route decision we visited a lot of people, in halls, during large meetings and at home at the kitchen table. We literally talked about issues at the kitchen table with a cup of coffee. You receive much less resistance in this way instead of closing the door, checking reactions and reacting juridical.' – Respondent I

This was also acknowledged by several stakeholders, they praised the project for its communication (see subchapter 'building relations'). However, participation in this project was still mainly reactive. As issues with local inhabitants received much attention they were eventually solved and they didn't threat the project's continuation. Still, a pro-active approach would have detected these issues (e.g. the Graafsebaan, see subchapter 'local knowledge') in an earlier stage saving a lot of effort. Furthermore, the public has had a limited say in plan-making, restricting the community to improve their local environment. Since plans for the project are known for a long time resistance remained limited, also probably thanks through the visionary image of the project and the fact that is a canal and not a (rail)road. There was also broad support for the project, thanks to the workshops.

'*They were against the canal but this opposition was limited. The advantage was that is already planned for a long time. The plan comes to almost no one as a surprise.'* - Respondent H

'The workshop was positive. The province said we really have to do something with this. The municipality of St. Michielsgestel said we have always said this. Staatsbosbeheer was there too. The Water Board said, well, these are important things. Eventually this led to that the steering committee, which we always have had, at a certain moment said, yes, there are good changes for an area-development.' – Respondent H

What can be considered remarkable is the limited cooperation with nature organisations. Eventually one organisation, Natuurmonumenten, is involved in a part of the ecological connection but at first nature organizations were very critical or even against it, despite efforts of the project team. From the perspective of the project team they demanded too much and their wishes were unrealistic. As they remained irrational cooperation was difficult.

'*Where we came across were ideas of nature organisation that are not realistic. You can try to meet their wishes but not until the infinite. That is difficult. At a certain moment you look for some rationality but when you eventually do not find it…'* – Respondent I

'There has been much consultation with nature organisations about all kind of details along the route to improve the ecological connection. We made a lot of effort to do this but this had not led to reasonability on the side of the nature organisations so that has remained difficult.' - Respondent I

Local knowledge

Local knowledge has only played a limited role in this project, mainly as the route globally remained the same during the years and the local people are only limited involved in designing the canal park. An ambition document concerning the spatial quality of area has been drafted but this is done by architects. However, there are some examples in which local knowledge played a role. This was mainly done in reactive way, following complaints. Dealing very careful with these complaints and starting a conversation with those people solved most complaints. For example, the already referred to Graafsebaan was changed in reaction to complaints of the local people. Instead of a high earthen wall in their front garden to support a bridge, the road now makes a curve and runs behind the houses (see figure 27). However, eventually you cannot do it perfect for everyone, also in this case not everyone was happy with the chosen solutions.

'*Eventually is in consultation with the neighbourhood decided to relocate the road behind the houses. That caused a lot of discussion as others would have liked to have it somewhere else, but you can never do it perfect. You can't just please everyone.*' - Respondent H

Also the problems concerning noise hindrance of the railroad were solved due to proper handling of the project team.

'*Based on this worst case scenario we could calculate that noise barriers were justified there. So my problem was solved and I just make these people happy. And those people appreciated our actions so much that they, without even asking, removed their complaints. They wrote a letter to the Council of State stating: 'we are so impressed by the actions of Rijkswaterstaat, we withdraw our complaints'.*' – Respondent H

The project managed to deal with these complaints in a proper way. But the usage of local views, values and experiences of the area is remains fairly limited and getting in conversation with local people is mainly reactive. A good example of a wrong perception of people's thoughts is given when dealing with complaints of people living close to the new Empel Lock.

'*We though these people are mainly bothered by getting a lock in their backyard which ruins their view. These are nice lessons, you think you know their problem. So we went to talk to them, Rijkswaterstaat wanted to be public-oriented organisation. I was well prepared and had asked my consultants to make some sketches, they understand it well too so they sketched a view with only green, covering up the lock… So you show them the sketches and they reacted 'and this is exactly our problem'. I really thought, uuuhh, explain to me what I need to see? They said, we now have an open view and in the future there will be a hill in which the lock is situated. And the open view over the lowlands is gone. And in future we will have to look at a bunch of trees.'* - Respondent H

Building relations

The Zuid-Willemsvaart offers an interesting case considering relationships with stakeholders. The first commonality of the interview results is the importance of certain people. Having the right people at the right time on the right spot is indicated to be crucial for an area-oriented approach to succeed. There is the need for people who have power to force certain actions but who also dare to cross borders as they are not encouraged by their principals to exert area-oriented practices. In order to get everyone moving in the right direction, strategically organizing your supporters is important, as the project has done by organizing a workshop and indirectly forcing the municipality to take action. On the other hand, other stakeholders can do the same. When project team members leave, stakeholders will try to negotiate again to promote their interests, as was experienced in this project. Furthermore, cooperating with other stakeholders requires people with the same vision and capacities on both sides, which was not always the case as is shown before.

The relationship with its environment was the incentive to approach this project in an integrated way. There was some resistance but as the project was already planned for a long time, this resistance was not too fierce. The outward oriented vision of the project and the drive to improve the spatial quality of the area was clear in this case.

'*The project manager, he had a very strong outward oriented vision. But also very aware of the fact that you're going to affect the landscape very strong… He really had the wish to create extra value, not just constructing a new canal but constructing a canal that fits very well in its environment.*' – Respondent I

The local community appreciated this approach, as reactions to the TN/MER of 20004 shows.

Neighbourhood committee Molenhoek: *highlighted is the fact that the author has been involved in many meetings with Rijkswaterstaat, which is experienced as very positive.* (Nota antwoord 2007)

Conservation Group Gestel: *appreciation is announced for the extensive and very well accessible information. (Nota antwoord 2007)*

As indicated before, discussion about money influenced the relationship with the municipality of Den Bosch. Partly this is due to Rijkswaterstaat, which shows the wish to act in an area-oriented way but does not want to or cannot bring money, which can cause disappointment or recall the idea of an unrealistic or unfair organisation. The difficult relationship with the municipality of Den Bosch has multiple causes, as is indicated by the interview results. Cultural differences are indicated, as well as the lack of capacity, vision and priorities have already been indicated. Furthermore, the perception existed that the municipality wanted to get as much as possible out of it.

'*You have a party who thinks, well they [Rijkswaterstaat] are going to start with the project and we are getting as much as possible out of it, because they are big and have money'.* – Respondent J

This triggered a reaction on the side of Rijkswaterstaat that focussed on solely bringing back what was legally necessary. This is exactly the contrary of an area-oriented approach. One of the reasons of a lack

of enthusiasm on the side of the municipality of Den Bosch was the obligatory nature of the project. They had to choose between two unwanted situations.

'*What I heard very often, until the end of the project, is: we don't want that bypass. And I said, but guys, who has then thought of this future vision? That was you, wasn't it? What played was that they had to choose for an undesirable development. They actually didn't want the project but they had to contribute 14 million euros. That doesn't bring them anything is their view. And then they also have to contribute to that ecological connection, an extra 5 million euros.*' – Respondent H

The result is a very difficult and distrustful cooperation. The climax was an issue about working with the same contractor. The municipality changed their mind at the last moment and started looking for its own contractor to implement the ecological connection, while synergetic benefits are clear when using the same contractor for both projects. Such a decision puts even more pressure on the relationship between the two.

'The municipality rejected it and said we are going to look for our own contractor because we think it can be executed cheaper and we think we pay too much. They indeed did that and we lost a lot of time due to that decision. Eventually they revised that decision and the same contractor is now building the canal park.' – Respondent H

This difficult relationship with the municipality has not made an area-oriented approach impossible, but comes at a cost. Opportunities are missed and the process has taken considerably more time.

'*The process towards it was far from gentle and smooth. But still, I think we did the good things together. It took longer and we really could have achieved more societal benefits by switching quicker at the beginning. We spend more there than necessary. The cooperation was just stiff, even when dealing with the canal. That's not smart. You have to invest in it, which we also did, but sometimes it just doesn't work.'* - Respondent H

The remarkable thing is that the cooperation with the Province of Noord-Brabant was good. They were in a certain way also obliged to contribute to the canal and the ecological connection and also had different interests. It is very difficult to point at something that explains the difference in relationships but the province isn't affected in such a direct way and at such a large scale as the municipality of Den Bosch.

'You could have ended in the same discussion as with the municipality of Den Bosch but that didn't happen. Because here too you haven't got similar interests. Still that didn't happen. Or, you can say, with Den Bosch it did happen.' - Respondent I

5.3.c. Conclusion

Building a new canal in a partly urbanised area is not an easy task to do and the project team indeed acknowledged that an area-oriented approach was necessary. As the canal bypass would not be feasible from an economic point of view it was even justified by improving the liveability of the area. The project enjoyed broad support from the main stakeholders, all but one, the municipality of Den Bosch. Their cooperation was reluctant as they were obliged to contribute to the canal and had to finance the ecological connection. Rijkswaterstaat was also not prepared to bring in extra money and together with some cultural and capacity issues it resulted in a very difficult cooperation. Cooperation was based on self-interest and despite investing in the relationship with the municipality, it hardly improved. Eventually they did come along, but at the expense of a lot of money, effort and missed opportunities to achieve win-win's and the creation of extra value.

Chapter 6: General Results

In this chapter the case study results are summed up to get a general impression of the projects and similarities and differences between the cases become clear. In this chapter also a relationship is established between the literature and the results from practice. The structure followed is the same as in chapter 5, first the integrality of lock projects is considered, followed by the aspects of institutional capacity-building.

6.1 Integrality of the projects

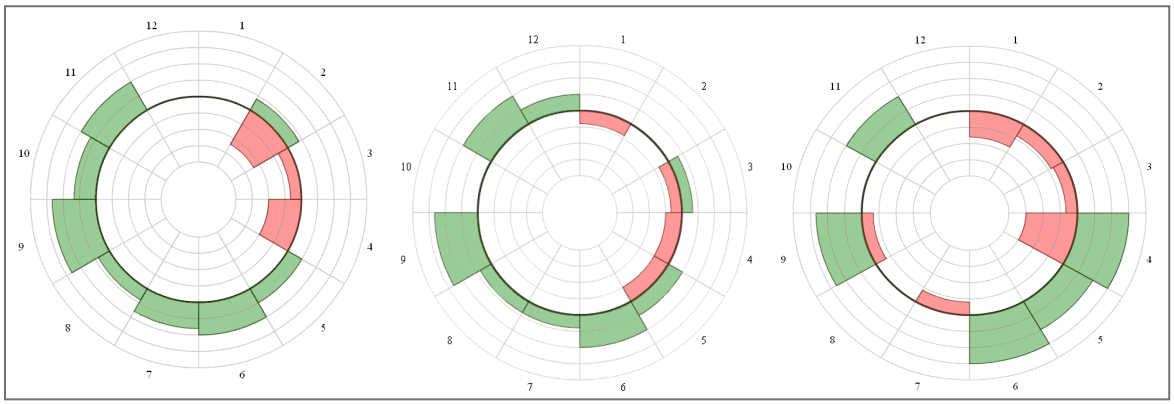


Figure 27: from left to right: Beatrixsluis, Sluis Eefde, Zuid-Willemsvaart

Omgevingswijzers

As the three Omgevingswijzers are compared, they show many inequalities. However, when we consider them more in detail, there are some similarities to be found. First of all, both accessibility (9) and economic attractiveness (11) score positive in all three project, but this is not surprising as accessibility is the direct goal and economic attractiveness is the indirect goal of these projects. Furthermore, spatial quality (6) receives much attention, especially through the aesthetic ambition documents. The use of space (5) shows variable results, most cases are able to align with local development demands or stimulate the multiple use of space but the efforts remain largely limited. The aspects of water (1), subsoil (2), energy & materials (3), and biodiversity & ecology (4) show little improvements and quite some negative results. Dealing with these aspects therefore rarely transcends the legally prescribed mitigation and compensation. The ecological connection along the Zuid-Willemsvaart is however an exception, but the negative effects are extensive too in this case. Furthermore, compensation of Sluis Eefde is integrated in an ecological restoration project of a small river, a smart approach. The use of energy & materials is dependent of the tendering, which has not started for Sluis Eefde and the Beatrixsluis, and is therefore difficult to judge. However, according to the current situation no real big efforts on this aspect are to be expected, despite high ambitions in the early stages of the Sluis Eefde project. The aspects of social relevance (7) and welfare (8) remain relatively underexposed. The use of local knowledge, public support or social welfare receive little attention, although the Beatrixsluis project has effectively used local knowledge to deal with the NHW and as a result enhanced the support

for the project. Welfare (8) is only limited affected by lock projects; health issues usually do not play a significant role and the reduction of nuisance is a standard criterion during tendering and was indeed limited in the Zuid-Willemsvaart project. Safety improvements are usually a positive side-effect of the projects as congestion can lead to dangerous situations. Investments (10), which deal with sharing costs and generating profits, receive very little attention, only in some cases costs are shared, such as the ecological connection of the Zuid-Willemsvaart. Remarkable, as budgets are under pressure. The final aspect, the climate for public settlement (12), has on first sight little to do with lock projects as it has a limited influence on employment or the level of public facilities. The project of Sluis Eefde however proves the contrary, by trying to start a 'learn-and-work' project, the project may provide a valuable contribution to the level of education of local young employees.

General result

We can conclude that the projects are not solely aimed at just construction a lock or canal with a sectoral focus, but they are far from integrated. The transport objective of the projects is only limited connected to other objectives. The most explicit example is the combination of the implementation of an ecological connection in the Zuid-Willemsvaart bypass but other examples include only minor adjustments or additions, although these measures are very valuable too. Waterways are host to multiple functions and the projects usually take these functions into account, but they rarely transcend mitigation and compensation. Initiatives and ambitions to do so are witnessed but rarely make it to the implementation phase, so chances are missed to become more integrated and the Omgevingswijzer could therefore have been much greener. Struiksma (2009) mentions the development of infrastructure planning from routing towards integration and compensation and possibly towards total design (see figure 7 in chapter 3.3.1.). The projects clearly show proof of careful integration as aesthetics receive much attention. Compensation is performed according the legally prescribed procedures and is combined in a smart way with nature development projects in two of the three cases. However, as is shown by the different Omgevingswijzers and in the paragraphs dealing with integrative place-making, the projects do not go beyond integration and compensation. The projects largely fail to incorporate the creation of extra value and do not contribute to a real improvement of the livability in the area. Looking at the spatial-functional dimension, the projects do not show a true area-oriented approach and do not match the features of sustainable infrastructure development.

6.2 Institutional Capacity-building

Now the performance on the spatial-functional dimension is clear, it is time to consider the organizational arrangement dimension of area-oriented planning. This is done by considering the results on each of the five aspects of institutional capacity-building, which gives us an impression of the governance style used.

6.2.1 Integrative place-making

In all three cases the complexity of the project is acknowledged as well as the relevance of dealing with the environment in a proper way. Denying the role of the environment is just not possible anymore as the citizens raise their voice more easily and want to stay involved and the projects are more dependent of local and regional support.

'As Rijkswaterstaat you can't close your eyes for the surrounding area, or thinking you're the only one on the world and you're solely there to build a piece of infrastructure. Then you really are short-sighted and working with blinkers on. You totally fail.' - Respondent I

But, several interviewees also point at the limits to taking up initiatives and ideas, as the project becomes too complex to handle.

'You can't put a fence around your project and say to your surrounding environment: 'this is our line, on this side you can colour and on the other side we colour. That doesn't work and you're not going to make it in such a way. But if put the whole world in your basket, it becomes way too heavy. We can't bear that anymore. So which considerations do you make therein?' – Respondent C

Another related question is how to deal with uncertainty? Being flexible allows a project to take up future changes and also chances. The Zuid-Willemsvaart has proven to be very flexible, but at the same time it makes it more difficult too. In order to deal with uncertainties the other two projects show more signs of 'hedging'. But, this hampers the process of looking for extra value, as was acknowledged by the interviewees.

'*You see that reducing the uncertainties is a dominant factor. And how do you reduce uncertainties? By hedging. And hedging, that is not looking for extra values*.' - Respondent C

In line with the recommendations of the Elverding committee local and regional governments are involved earlier in the process, promoting alignment of developments and linking interests. The alignment of developments can indeed be witnessed in the projects but linking interests is far from common practice with only a few examples, such as the widening of a fly-over of a regional road and some small-scale recreational facilities. Therefore, cooperation between governments is largely focussed on preventing degradation of the other's interest and reasoned out of self-interest. Examples are the cooperation between the municipality, the province and Rijkswaterstaat in the case of the Beatrixsluizen and the attitude of bringing back only what was there before in the case of the Zuid-Willemsvaart.

The motivation to start a project is in all three cases the improvement of the network performances and the attached indirect economic benefits. Some secondary objectives can be identified, such as improving shipping safety, but improving the quality of the environment is in none of the cases part of the objective. The projects show different reasons for looking beyond the transport objective. In the case of the Zuid-Willemsvaart the large spatial impact, the municipal future vision and a very dedicated project team provided the motivation to extend the project's scope. In the case of Eefde, the very active local

community and the Highport initiative stimulated a broader vision and the NHW issue and the multiple developments in the area were the incentive in the case of the Beatrixsluizen.

In all three cases attempts can be found of searching for chances to create extra values, profitable developments that can be initiated or interests that can be linked, initiated by the project or by others. These ideas or chances vary greatly; small, big, realistic, unrealistic, but most of them have something in common, they are never executed. There are various reasons that explain this phenomenon. Sluis Eefde offers the best example, a project with high ambitions but ending as a quite straightforward project. Looking at Rijkswaterstaat, these 'extra's' may cost little to no extra money and especially may not result in additional risks. Furthermore, ambitions are the first do be skipped when a project faces budget cuts.

'Ambitions may cost some money, but they are usually cancelled the first' - Respondent L

Other chances are not taken as nobody is prepared to pay for it (e.g. soil contamination at the Zuid-Willemsvaart) or nobody wants to or cannot take ownership of these ideas (e.g. extra value scan Beatrixsluis). Remarkable is the fact that when doing something extra decreases a risk, e.g. by enlarging public support, this is justified and is allowed to cost additional money, as was stated during the focus group discussion. Fortunately, not all chances are missed and the projects do certainly show some sensitivity to their environment. Taking chances however requires in most cases searching for one's borders or going even beyond it. The reason for this is that the project's principals focus on budget and planning and do not stimulate area-oriented practices. Although the project teams have some freedom to focus on certain aspects, they are usually limited by their scope.

'*On the one hand they expect us to think integrated and to look whether integrated solutions are possible, but on the other hand they expect us to deliver the products within time and budget. There is a certain tension between the two, that's difficult*.' – Respondent C

'*To which extend do you as a project's principal focus on achieving goals within time and budget'* – interviewer
'*Quite much, there needs to happen a lot before we deviate from the scope*' – Respondent B

It is in line with some experiences from literature, Beukers et al. (2012) states that it is difficult to explain why an integrated vision on infrastructure development is necessary. This has partly to do with the way project teams are controlled and how goals are defined. It is therefore not only important to convince project teams but also the guiding layer above it (Beukers & Heeres, 2012). This has also to do with the role of Rijkswaterstaat, which is perceived in different ways. Some stick to the traditional role of Rijkswaterstaat, building and maintaining infrastructure, while others see a broader role for Rijkswaterstaat in which wishes and demands of the environment are indeed allowed to cost some extra money. What at least can be witnessed in all projects and what is expressed in most interviews is the struggle with the exact role of Rijkswaterstaat in the project. On the one hand the improvement of liveability is part of Rijkswaterstaat's mission statement and via all sorts of ways it is communicated that Rijkswaterstaat pays attention to its environment and wants to work in an area-oriented way. On the

other hand, the projects are still controlled with a focus on time and budget. Liveability therefore remains a grey area.

'With the new mission statement we have gained a bit broader role and we don't really know yet what that exactly means, being the executing organisation of the Ministry of Infrastructure & Environment and the whole liveability thing.. Something with liveability and that goes beyond building and minimising effects' - Respondent K

Looking at the projects in general, none of them presents a visionary image of a project that links economic, social and natural values and which acts as a frame of reference which stimulates and coordinates action, as Healey (1998) described it. One cannot speak of true integrative place-making, as the Omgevingswijzers also clearly show. The Beatrixsluis is probably the best example, they dealt with the NHW in a proper way but attention for the natural aspects is limited to mitigation and compensation and social profits receive very little attention too. Sluis Eefde possessed good chances to become a good example of integrative place-making but is now largely limiting itself to facilitating other initiatives in the area. The project however featured some kind of frame of reference; the most sustainable lock of the world. This vision united the involved parties and since the local community was involved, they were able to shape their local identity and also able to influence local politics and agenda setting. So, although the final results may not be very shocking, the project actually shows quite some signs of integrative place-making. The Zuid-Willemsvaart in combination with the canal park also shows some signs of integrative place-making, it presents a grand plan of a large area and links several interests and is also broadly supported. However, it is not truly supported by the municipality of Den Bosch, for various other reasons, and, more importantly, does not involve the local community. In this way they are not able to contribute in shaping their local identity. Since they are also able to influence agenda setting, local politics and public investments, an important aspect is overlooked.

6.2.2 Collaboration in plan-making,

All three projects showed that collaboration in policy-making is nowadays inevitable. Even in relatively simple projects cooperation with the local municipality is needed and usually other parties are involved too, such as provinces, water boards or other stakeholders. This is partly due to the decentralisation of tasks and responsibilities to lower governments. Another reason is the shrinking budget of Rijkswaterstaat.

'The pile of money of Rijkswaterstaat is getting smaller and smaller so we will have to cooperate. That demands different skills, also from our organisation, responding to these changed needs. As a result, other parties, other governments, become more important.' Respondent L

As a result, Rijkswaterstaat's projects become more and more dependent of the local and regional governments, adding to the complexity of a project. Sluis Eefde provides the best example of such dependency, as the project does not follow the Infrastructure Act but the Spatial Planning Act it has to

be approved by a municipal zoning plan. Cooperation with these other governments and stakeholders is though not always easy, it varies between the projects. Sluis Eefde features a cooperative municipality, mainly as the project is more of a chance than a threat to the area. But, the other two projects have more issues. The Beatrixsluis and the connected canal widening measures interfere with the development of a business park by the municipality. Despite this tension both parties pretend to be benefiting from the cooperation between the two which indeed seems to work. The Zuid-Willemsvaart has a very delicate relationship with the municipality of Den Bosch and cooperation has been difficult. There are several reasons to be found that partly explain the difficulties in cooperating. First of all, the role of each party in the process is not always straightforward. Rijkswaterstaat is clearly struggling with its role since liveability is part of their mission statement and has difficulties to determine to what extend it should take up external developments. Other governments can have difficulties in balancing the various interests it promotes, such as the municipality of Den Bosch has shown. The result can be that Rijkswaterstaat can not start a certain wanted development as they are not authorized, while the responsible government does not want to take over, as was the case in the Zuid-Willemsvaart project.

'*What you actually do is taking over their role, because they have to play that game as responsible spatial planning authority. So that was a handicap'.* - Respondent H

It touches upon one of the goals of fruitful cooperation; a sense of ownership and commitment to a certain plan. This was clearly not the case in the first place in the Zuid-Willemsvaart project, only later on the municipality could associate itself with the total project. The Beatrixsluis project does not feature a shared ownership but the solution to the NHW does and it has effectively worked to prevent future discussion about the chosen solution. The Sluis Eefde project is a very interesting case, struggling with their exact role and limited by their scope they did not feel real ownership of the Highport Eefde initiative. The three cases together offer the complete palette: the Zuid-Willemsvaart project has shown the difficulties of a lack of ownership by others, the Beatrixsluizen project shows the benefits of a shared ownership and the Sluis Eefde project shows the consequences of not willing to take ownership.

Money always plays an important role in collaborations; who pays what is often the discussion. Rijkswaterstaat intrudes with a big project but does not want to pay for all sorts of wishes of the municipality or other parties, while the local community hardly profits of the huge investment which is done in their area. This was for example experienced in the case of the Beatrixsluis, cooperation with the municipality was fine when talking about main issues but the discussion hardened when talking about money. Cooperation with different parties and governments makes it more complex and as a reaction, all three projects include some sort of administrative agreement to secure certain agreements, especially concerning financial agreements.

Non-governmental stakeholders are remarkably little involved. Skippers association Schuttevaer as representative of the main users is traditionally involved in the projects, declaring their nautical wishes for the locks and canal. Water boards are also traditionally involved, although cooperation is usually limited to meeting their standards. Other collaborations are rare, but there are a few good examples in which Rijkswaterstaat shows to be capable of setting up such collaborations. Both in the projects of Sluis

Eefde and the Beatrixsluis bird clubs have been involved in order to deal with protected birds, turning former resistance into cooperation and support. Furthermore, attention is paid to the different wishes of stakeholders which are collected in a so-called Client Demand Specification, which can eventually be translated to demands to which the contractor has to apply. Businesses that profit of the project are involved too but they do not directly contribute to the project. For the Twente Canal however, of which Sluis Eefde is the entrance, transport businesses agreed to increase their transport volume of shipping. An interesting attempt is the cooperation with nature conservation organisations in the case of the Zuid-Willemsvaart. At first sight one would think they would be enthusiastic about the ecological connection but they were actually quite critical and demanded in the eyes of Rijkswaterstaat unrealistic adjustments.

The three cases clearly show several prerequisites for a good cooperation in an area-oriented approach (see also figure 28 in chapter 7). As different parties are involved with different interest and cultures of working, showing sensitivity and understanding to these differences is necessary to cooperate effectively. The NHW issue shows that when the underlying interests are shared, greater understanding can be achieved. A similar vision and priority is vital too. The municipality of Eefde has an alderman of sustainability who was obviously enthusiastic about the project's ambitions. The municipality of Den Bosch clearly lacked an area-oriented development vision in the first place, frustrating the cooperation. Having enough capacity and knowledge within the organization is important too, cooperation with multiple parties is difficult and demands high skils and large efforts. In the case of the Zuid-Willemsvaart the municipality was working on a large project on the other side of the city and could therefore not assign the necessary people to the project of the Zuid-Willemsvaart.

'*Honestly, they [the municipality of Den Bosch] lacked the skills'*- Respondent H

The situation of Sluis Eefde is exactly the contrary; the project was given low priority and received as a result little capacity. It is also clearly an issue that plays a role within the organisation of Rijkswaterstaat as priorities change and the organisation is currently reorganizing to reduce the number of employees.

'*There have been many road projects, due to 35 Emergency Act projects with rush hour lanes, they received a higher priority and the voters are of course the car-drivers. You then notice a limited capacity for waterway projects.'* – Respondent A

6.2.3 Inclusive Stakeholder involvement

Looking at stakeholder involvement in the projects, especially the attention for stakeholder analysis and environs management is striking. Stakeholders are analyzed during the project, mainly by looking at whether they are in favor of or against the project and the power they possess. Based on the analysis strategic approaches are chosen about how to approach or involve certain stakeholders. The environs manager is part of the project team and Rijkswaterstaat pays a lot of attention to this relative new function. Stakeholder analyses and environs management are not the same as risk management, as was

stated by most interviewees. It is more than risk management, also paying attention to chances to link interests. However, it touches upon it and there is at least a strong relationship between the two. As was stated in the focus group discussion, stakeholder involvement initially focuses on linking interests and exploring chances but this shift towards a more risk-oriented perspective as the project advances and more and more aspects of the project become fixed.

'In the beginning you indeed don't look at the risks but at the chances, are there possibilities to join certain things? And when most things are settled, there is little room for improvement left and most chances are covered. Then you start to focus on the risks so you remain within the frameworks'- Respondent L

It is one the reasons why stakeholder involvement is important from the early stages onwards. Cooperation should start early, before the involved parties have taken their stance. But, what it witnessed in practice is that ambitions were not addressed in the beginning of the Beatrixsluis project and working in an area-oriented way was not being done in the first place in the case of the Zuid-Willemsvaart. Chances are therefore missed and starting to work in an area-oriented way will be more troublesome and cost more effort. Furthermore, cooperation requires long-time efforts as the plan study and plan elaboration phases cover multiple years.

'And after about 1, 5 years of struggling, I'm not sure how long exactly but it took a long time, the director of strategy said, you are right, you are completely right... It is our turn to do something. We have missed something here.'- Respondent H

Other results however present a contradicting picture and governments might not be so open and looking for linking interests as is presented by some of the interviewees.

'*It is often the primary attitude of government agencies, risk management instead of moving towards chances. But that does not mean they are risk oriented by definition, I think we have moved beyond that point in the meantime'* – Respondent K

Cooperation is usually based on dependency or contradicting interest and therefore risk-oriented, while it would be better to move towards chance-oriented cooperation. The Highport Eefde initiative is actually the only cooperation encountered that is purely based on a chance perspective. Risk-oriented cooperation is still necessary though and Rijkswaterstaat has shown the ability to successfully cooperate in such cases, as was for example shown by the cooperation with the bird clubs in the Beatrixsluizen and the Sluis Eefde projects.

When approaching the environment the projects take a clear stance: there is something that has to be done, building infrastructure, but the way how it is done can be discussed. This reminds us of the scenarios of Christensen (see figure 5, p.27), presenting in this case a scenario with a clear goal but with undetermined means. Stakeholders are invited to collaborate in thinking about how it should be done, but the projects do clearly make a choice when to involve who. In the case of Sluis Eefde the local community is involved from the Preference Decision, but in the case of the Beatrixsluis they choose to

involve the community only after the draft route decision is published. Influence on the project will therefore be limited to small adjustments. The Zuid-Willemsvaart also shows a reactive approach, dealing with complaints after the plans are published. Referring to Arnsteins ladder of participation (see table 2, p.25), the projects mainly limit themselves to informing the public and do not go beyond consulting. An approach of informing is taken in order to sense possible complications, which then receive attention of the project. This not only witnessed in the case studies but also expressed during the focus group discussion.

'On those public meetings you receive feedback and you have to trigger on that'- Respondent A

Dealing with these issues is done carefully, as the NWH issue and the noise barriers issue in the Zuid-Willemsvaart project show. Sluis Eefde is really consulting its environment, being open for ideas and input, and giving feedback. However, even in this case they do not shift towards real participation and it takes more than stakeholder mapping to come to inclusive stakeholders involvement (Healey, 1998). The environment clearly does not decide. The only exception to this is the selection of a bureau to do a cultural and historical research on the NHW, some decisive power was shared in the selection with certain stakeholders. The ambition documents, when drafted in collaboration with the environment, and the Client Demand Specifications are promising though. When they are well translated into demands for the contractor or into the MEAT criteria they guarantee the environment's input and improve participation.

'*But you now see that we really collect client demands as a standard, while this was not the case before. What does a municipality want? That was conceived by Rijkswaterstaat. So that's a very strong improvement.'* - Respondent G

6.2.4 Use of Local Knowledge

The importance of involving local knowledge is confirmed in several cases. The idea of Sluis Eefde as the postcard of the region helped to establish awareness of the importance of the object for the region. Also, simply blowing up the object of the NWH was certainly undesirable for a range of stakeholders. Furthermore, instead of being bothered by a concrete and 'ugly' lock, as it was perceived by Rijkswaterstaat, it was actually obstructing the open view that bothered inhabitants of Empel the most. The way the projects have dealt with local knowledge varies but only Sluis Eefde actually uses it explicitly. The 'postcard of Eefde' was for example an alternative used in the EIA and it also plays a significant role in the ambition document. Other uses include the curve in the Graafsebaan at the Zuid-Willemsvaart and the involvement of bird clubs at Sluis Eefde and the Beatrixsluis. Also, the involvement of specific knowledge started a learning process about how to deal with the NWH in a proper way, eventually resulting in a respectful solution. All these situations are good examples of how resistance is turned into acceptance or even support and are therefore an important contribution to the project. But, it is important to note that besides the postcard of Eefde all examples of involving local knowledge are in reaction to a possible threat to the project. Only in the Sluis Eefde project the local inhabitants were to a certain degree able to bring in their creativity and contribution to project's plan. We can therefore conclude that the value of local knowledge is not fully appreciated as it is not proactively obtained and

only involved up to a certain limit. This has partly to do with the limited participation since one of the benefits of participation is the collection of local knowledge, as was also indicated during the focus group discussion.

'So besides certain wishes, you can also use the local knowledge of local inhabitants. So you might even move towards consulting, that somebody gives advice based on his local knowledge.' Respondent K

The examples however do show some degree of sensitivity and through including it in the ambition documents and contracts/MEAT-criteria its value is secured. However, to make use of its full potential it should be collected proactively and it requires more extensive participation to shift towards real participation.

6.2.5 Building relationships

The relevance of the relationships with stakeholders was apparent in the case studies. The clearest example is provided by the relationship in the Zuid-Willemsvaart project with the municipality of Den Bosch. But the other two projects also give interesting insights into the relevance of building relations. The Beatrixsluis project and the municipality of Nieuwegein pretended to profit of their cooperation while it was partly conflicting with their interest. A constructive cooperation was the result, while it is was imaginable it could have turned out differently. The case of the Zuid-Willemsvaart shows that a lack of a good relationship costs time, money and goes at the expense of good chances to obtain extra value. It also shows that despite investing a lot in such a relation does not always delivers the desired result. On the other hand, the Zuid-Willemsvaart project also shows that a good relationship makes a project more flexible and the project was therefore able to take up some last-minute adjustments of province.

Some other important lessons can be distinguished when looking at building relations (see also figure 28 in chapter 7). First, the importance of people is stressed by several interviewees. Following an area-oriented approach requires dedicated people which are on the right spot at the right time and who have the power to exert influence; some kind of ambassadors.

'*What do we need to strengthen area-oriented planning?*'- *interviewer*

'People, people who have the courage to do so, who dare to cross their borders… People who really believe in what they are doing. And then it will happen, against all budget separations etc.' - Respondent I

The reason for this is partly that projects are not encouraged by their principals to follow an area-oriented approach, so the initiative has to come from dedicated people. Although project teams are limited by their scope, some freedom exists to determine how to treat certain aspects themselves. As a result, the way the environment is approached differs between the projects.

'*The project control says you must do what is necessary to implement your project. If you need to start a process with your environment, you have to do that. In that way it is open … You determine largely your own playground. That is a chance but also a risk. It is very much dependent on the person. If you want to change that, you should determine as an organization how you look at certain things.'* - Respondent C

It is important for these ambassadors to organize their supporters. This was effectively done through workshops in the case of the Zuid-Willemsvaart, but was not done or not successful in the case of Sluis Eefde, as the project team members did not share the same level of ambition. Building relationships is therefore also an internal matter as it is important to receive full support from your own organization. Rijkswaterstaat tries to be an organization that acts as a unity, but this clearly shows that this is not always the case. Furthermore, understanding and trust are two very important aspects. As many different interests are involved and differences in culture exist, being sensitive to these differences is needed to build relations and to effectively collaborate. In these situations being reasonable is important too, as was shown by the largely failed cooperation with nature organizations in the Zuid-Willemsvaart project. Trust might be the most important aspect of building relationships. In complex projects a trustworthy relationship in which partners grant each other benefits is very important. However, in many of the relationships involved in the projects, promoting one's self-interest was witnessed very often, especially when dealing with finances. For example the delicate relationship between the Beatrixsluis and the municipality of Nieuwegein was at risk of falling back into defense mode as the discussion about costs hardened. The administrative and political dynamics added to the uncertainty of the project through interdependency, putting pressure on the trustworthiness of partners. Important in these relations, as is mentioned before, is a shared vision in which parties collaboratively take up the challenge.

A very interesting aspect is the relatively 'easy' environment of the projects. Compared to other infrastructure projects there is little resistance to the projects with exceptional support of ex-skippers in the adjacent neighborhood in the case of the Beatrixsluis and being the local landmark in the case of Sluis Eefde.

'*The great thing about locks is that we can operate relatively in the background. In all waterway projects actually. When we build something, there is always some feeling of Dutch glory attached to it.'* - Respondent C

The projects showed different reactions to this. As there was no real incentive to initiate something, the Beatrixsluis project did not do much more than informing the public and no significant relationship was established. At Sluis Eefde there was a positive incentive to do something with the local community and ideas and wishes were collected and feedback was given, enhancing the relationship. However, as the level of ambition is seriously downgraded, a lot of effort has to be put in expectation management to prevent a too big disappointment. It stresses the importance of setting realistic objectives and ambitions and to clearly communicate what you can do and cannot do. The impact of Zuid-Willemsvaart is by far the biggest and there is indeed some resistance. However, instead of dealing with the resistance in court, the environs manager visits the opponent at the kitchen table and starts a conversation, showing

respect and understanding of their situation. As indicated by the interviewees the media forms a new challenge. As they critically watch projects and easily reach many people, it can make or break your project. The Zuid-Willemsvaart has definitely shown awareness of this fact. Together with local school kids they indicated with poles the new location of a lock and the installation of one the lock doors could be viewed by a webcam. This is partly due to fact that people express themselves more easily nowadays and more easily turn towards the media to address certain issues. This change is acknowledged by almost all interviewees and is not necessarily regarded as a bad thing since they are usually well-informed and force Rijkswaterstaat to do their job properly.

´On the one hand you see that stakeholders raise their voice more easily nowadays but they are also better prepared. Some people find it annoying, as it costs more time to deal with. On the other hand I find it worse when I have to deal with a stakeholder who is not interested and only starts to complain when we start digging.' - Respondent G

To conclude, Rijkswaterstaat has clearly shown the ability to effectively build relations but the incentive to do so was in most cases based on a potential risk or dependency. It is not possible to speak of a rich social infrastructure in the three cases in which trust and the sharing of norms and values prevails. So, although the benefits are clear, Rijkswaterstaat is not willing to invest in building good relations for the sake of achieving extra value.

6.3 Confrontation with literature

It is interesting to see which findings in literature correspond with the research results, and also which do not correspond. The aspects of institutional capacity-building have been examined extensively so in this paragraph we specifically refer to the theoretical concepts of participation and complexity & uncertainty, and the experiences with area-oriented planning in literature.

Complexity & uncertainty

The idea of complexity is clearly not only introduced in planning theory but also in planning practice. Several interviewees point at the complexity of the projects and acknowledge that even projects with a limited spatial impact, such as the lock expansions, can still be complex. Furthermore, stakeholder analyses are made and environs management is introduced in order to address the complexity of the project. Project team members admit they deliberately make choices whether to involve certain interests or stakeholders based on the perceived complexity of the project. Heeres et al. (2012) indeed mentions this tension between the increased number of actors and the manageability of the process. The more actors involved, the higher the context-specific knowledge available and a higher chance of optimal outcomes. However, at the same time it may result in time and cost overruns as the process becomes more complex (Heeres, Tillema et al., 2012b).

An attached aspect is how to deal with uncertainties, already mentioned shortly before. Reducing uncertainties has become a major objective and is especially addressed through risk management.

Although the Zuid-Willemsvaart project shows signs of flexing, the other two projects mainly deal with uncertainties through hedging, something that seems to be strengthened by public-private partnerships. This seems contradicting but the DBFM contracts used in two of the case studies are new to waterway projects and Rijkswaterstaat tries to reduce the uncertainties and risks over the complete contract-phase, which covers thirty years. According to (Lenferink, Tillema, & Arts, 2013) DBFM contracts actually promote area-oriented practices but this was not perceived in this way by some interviewees. As the use of DBFM contracts is not the object of study it is not possible to draw certain conclusions, but additional research could shed more light on this issue. Looking at the scenarios of Christensen (see figure 5, p.27), the projects clearly find themselves in box B, with an agreed goal but an unknown technology. This is in line with Woltjer's findings (2002) that Dutch planners find themselves mostly in box B. The goal of the projects has been clear from the beginning and has not changed during the planning process. The exact way of achieving this goal is the subject of debate.

Participation

Looking at the Arnstein's ladder of participation (see table 2, p.25), participation in the case studies does not go beyond symbolic participation. In most cases it is limited to informing the public and only the Sluis Eefde project features aspects of consulting the public. The other two projects take a rather reactive approach to participation. It is therefore in line with the findings of Voogd & Woltjer (1999) as the projects do not feature an open-planning process but instead signs of 'tokism'. The projects focus clearly on the instrumental function of participation and not the normative function, which is in line with the results of Van den Brink (2009). It is not used to increase the legitimacy of the project and local inhabitants are not invited to join in and actively contribute to shaping their own places. As a results, the available local knowledge is not obtained and used, deteriorating the project's alignment with its environment.

Experiences in literature

Teisman (2012) mentions co-opetition as a way of managing the governmental fragmentation and exists of both competition and cooperation. Competition between governments is indeed witnessed in the case studies with the Beatrixsluizen project as a very clear example. Competition, however, prevails over cooperation in many cases and the combination of development powers is rarely witnessed. Governments focus on their own interest and limit themselves to their strict responsibilities. Governments also show strategic behavior, such as the start of the Beatrixsluizen project in reaction to plans of the municipality to develop a business park or trying to discuss existing agreements when a certain project team member leaves and is replaced by a new one, as was indicated in the Zuid-Willemsvaart project.

Several authors have pointed at difficulties encountered in area-developments and some can indeed be witnessed in the case study lock projects. Teisman (2012) and Dammers et al. (2004) both point at the importance of having certain ambassadors; people who promote the development and have the power, skills and time to do so. This was also indicated as in important factor by several interviewees. Stead &

Meijers (2009) point at instrumental and cultural difficulties in cooperation. Both were encountered in the case study projects and especially the instrumental difficulties, e.g. defining costs and benefits, proved to be bothering relationships between parties. Teisman (2012) also points at political dynamics that can influence projects. This was not encountered as a problem in the examined projects. This is partly due to the fact that two projects follow the Route Act but Sluis Eefde has to be approved by a municipal zoning plan and is therefore very much dependent on the local community. However, this has not led to real problems. Van Rooy (2006) states that we need to improve this new of working and have to discover the consequences for everyone. According to some interviewees this new way of working is still in its infancy and we should improve it through learn-by-doing.

Chapter 7: Discussion & Conclusion

7.1. Discussion

Before moving towards the conclusion we first reflect critically upon the quality of the research results and some substantive points of discussion. As Yin (1984) mentions validity and reliability as indicators of the quality of empirical social research, we first consider these two aspects. Reliability is concerned with internal consistency and validity is concerned with truth value, or in other words whether conclusions are correct (O'Leary, 2010).

Reliability

The three lock projects were deliberately chosen and the interviewees and participants of the focus group discussion were carefully selected. However, as Janssen-Janssen (2010) indicates, it is difficult to compare infrastructure projects due to their unique context: no project is the same. Therefore, other case studies would have provided different insights. To partly counteract this research deficit common factors are distinguished, factors that are witnessed in all three cases. Per case two or three persons were interviewed. Due to time constraints it was not possible to interview more persons or persons from outside Rijkswaterstaat. Experiences from other parties involved in the project would certainly have enriched the view of the project. A criterion for selecting the interviewees was the involvement in the project for a longer period. As project teams regularly change, it was inevitable to invite interviewees that are former project team members and who do not exactly know the present state of the project, or current project team members that only partly know the project's history. The questions asked during the interviews have changed more or less during the research, despite testing the questions in advance, and this might have affected some results of the interviews. This was inevitable as it was a process of learning by doing and every interview provided new insights. Data analysis was done consistently and uniform, through coding certain quotes several common themes emerged. In order to distinguish common themes this was done on a general level per aspect of institutional capacity. All interviews are recorded and written down completely and the transcripts can be viewed on request.

Validity

Researching aspects of institutional capacity-building entails some difficult to grasp terms such as collaboration and relationships. It is therefore impossible to simply 'measure' institutional capacity-building. This is even more impeded as only Rijkswaterstaat employees are involved, delivering a single-sided view. This was inevitable as it was not possible to conduct more interviews due to time constrains. This however has an effect on the validity of the results, as for instance cooperation obviously involves more than one party. A total view on institutional capacity-building could have brought some interesting results to the fore, for example telling us more about why cooperation with nature organizations was so difficult in the Zuid-Willemsvaart project. However, this would require an in-depth analysis of the projects, making a multiple case study impossible to exert, mainly due to time constraints. It is therefore

not the aim of this research to judge the quality of the institutional capacity in the cases but to explore in which ways Rijkswaterstaat tries to exploit and build institutional capacity and to find commonalities between the projects. To limit the influence of personal views on the results, the documents of the project provided a second check on certain views. To find common factors that explained the results of the Omgevingswijzer interview results are grouped through coding. The more interviewees quote a certain explanation, the stronger the explanation is. To guarantee validity only strong results are given in the general results and general conclusion. In order to deal with the researcher's coercive, normative and mimetic interpretations the interviews and focus group discussion are taped, re-listened and typed out completely. Just like institutional capacity, the uptake of area-oriented planning can't be measured as it is a way of working. In order to still 'measure' the adaption of area-oriented planning this research looks at two indicators. First of all, the Omgevingswijzer is used to give an impression of what area-oriented planning ought to achieve; integrated and sustainable infrastructure development. Next to that, the governance style is assessed, which is mainly covered by looking at the aspects of institutional capacity-building. This is in line with the distinction Heeres et al. (2012) makes between the two dimensions of planning; the spatial-functional perspective and organizational arrangements. Concerning the Omgevingswijzers, although these are based on formal documents, some subjectivity is inevitable. Some sub questions of the Omgevingswijzer are still prone to multiple interpretations (see review in annex I). However, scores are not intended for interpretation in absolute sense (Heeres et al., 2012a)and the tool is meant to deliver a general impression, so this validity issue is acceptable.

Scope

There is a certain limitation to the scope of the research results. As the projects are currently in progress, they present a reliable picture of the current planning practice of locks. However, as there is no research data available on past projects it is not possible to distinguish any real trends. Still, interviewees have given reliable insights in the past developments, at least giving an impression of these developments. The scope of the results is also influenced by the fact that the projects investigated are all executed by Rijkswaterstaat. This was deliberately chosen but this means that the results do not simply apply to other lock projects. Lock projects in The Netherlands not executed by Rijkswaterstaat face other organizational cultures and institutional contexts, which would alter the results. From an international perspective, these differences are even bigger and so the research results presented in this thesis are very limited applicable to lock projects in other countries.

Substantive discussion of the results: added value for lock projects & the exact role of Rijkswaterstaat

As stated in the methodology in chapter 4, an objective stance is taken with regard to area-oriented planning. Several authors claim that area-oriented planning has several benefits and leads to sustainable infrastructure development. It is therefore wise to critically reflect upon this point of view. Is area-oriented planning actually of added value to lock projects? It is impossible to come up with quantative results judging the extra value in lock projects and this is also not the objective of this research. However, by looking at the different experiences in the case study projects it is possible to have a say about it. To start, most interviewees pointed at the complexity of their projects, even though two

projects entailed ‘just’ the expansion of a lock complex, with limited spatial impact. It therefore certainly can be of value as it focuses on cooperation and an open and flexible plan which is properly aligned with other developments and transport networks. Through the early actor involvement resistance is prevented or detected in an early stage. It can therefore indeed be regarded as an approach that effectively deals with complexity in projects. The possibilities to link interests are quite clear as waterways are host to multiple functions. Lock projects quickly affect other interests such as recreational shipping, tourism, water-system aspects and cultural heritage. The difficult point about this is whether one should actively pursue such developments. On the one hand it can deliver extra value, but on the other hand it can also make a project unnecessary complex. Based on the experiences of the case studies it is impossible to say whether the one outweighs the other. But, some cases are witnessed in which synergies are achieved by just a little effort, such as recreational facilities on lock complexes. To harvest this ‘low-hanging fruit’ little effort is needed but it still demands an area-oriented vision to find and exploit these chances. An area-oriented approach to lock projects is therefore justified but it is beforehand impossible to say what the exact benefit is and every project still needs its own tailor-made approach. Whether the approach leads to the integrated and sustainable development of infrastructure is hard to say based on the case studies. However, it is possible to conclude that it at least stimulates it. As it aims to involve multiple interests and a wide range of stakeholders it certainly is more integrated than traditional approaches. Looking at sustainability, the alignment with other developments and networks indeed promotes more sustainable developments and the many involved interests and stakeholders stimulate a well-balanced solution. Furthermore, the approach offers good opportunities to deal with the dimensions of culture and politics of social sustainability as it focuses on community involvement and close cooperation with local governments. The questions remains however whether weak interests are taken up when they are not actively promoted by a party.

The discussion about the added value of area-oriented planning touches upon the question to what extent one should strive for extra value and what is the exact role of Rijkswaterstaat as a governmental organization? Should it strive just for proper working transport networks or for greater social welfare? It is acknowledged that traditional, object-oriented planning is currently inappropriate and we should integrate policies. However, to which degree do we have to integrate and involve interests?

One problem with this ‘planning as everything’ approach is where to draw the sectoral ‘boundaries’ (Allmendinger, 2009)

Rijkswaterstaat is clearly struggling with this question and multiple movements who think differently about this exist within the organization. Liveability has become part of the mission statement but it remains a very grey area and in many cases it still relies on its traditional task. As a result, Rijkswaterstaat ‘can not’ construct cycling lanes along canals but it ‘can’ construct secondary roads along it. On the other hand, should Rijkswaterstaat be responsible for the total area-development around an infrastructure project or become a ‘teahouse’ operator? Anyway, it is advisable for Rijkswaterstaat to clearly determine its exact role, as it is currently vague for many of its own employees and partners.

7.2 Answers to the sub questions

Before answering the research question we consider the sub questions as they help to answer the research question.

1. *How integrated are the case study lock projects?*

The Omgevingswijzers present a clear image of the integrality of the case study projects (see figure 27, p. 86). None of the three cases presents an integrated project and economic benefits clearly prevail over social and natural values. Attention is given to spatial quality and aesthetics, indicating an approach focusing on integration and compensation. Negative effects on natural and social values are mitigated and compensated according the legally prescribed measures but the project is not used as an incentive to improve these values. The projects however do not completely neglect their environment and are not entirely narrowly focussed on achieving the transport objective. Rijkswaterstaat has clearly learned its lessons and effectively deals with possible resistance or risks. But, the incorporation of other interests is far from common practice and extra value is only sparsely created, despite the presence of chances to do so. Therefore, the projects are not integrated and also unsustainable and do not enhance the liveability of the surrounding area.

2. *In which ways is institutional capacity used to foster the project's performance?*

Institutional capacity is only limited build and used in the projects and its full strength is certainly not exploited by Rijkswaterstaat. Integrative place-making through visionary plans which connect various interests is only partly done. In the case of Sluis Eefde such a plan existed in the first place, it would become the most sustainable lock of the world, but lost its strength as ambitions were downgraded. It did however show the use of integrative place-making: it united stakeholders, helped to direct actions and offered the local community the ability to shape the identity of their place. Collaboration in policy-making is inevitable as Rijkswaterstaat is becoming more and more dependent of local support and other lower governments. Cooperation is not always easy and several prerequisites are found which are necessary for a successful cooperation (see figure 28). Furthermore, most collaborations were risk-oriented instead of chance-oriented as cooperation took place to protect one's self-interest. Related is the sense of ownership of certain plans. The lack of it clearly explains the difficult collaboration with the municipality of Den Bosch in the Zuid-Willemsvaart project. The use of it is clearly showed by the shared solution for the NWH as it prevents future opposition. Participation is limited to reactive approaches and mainly symbolic as the public is solely informed. Some consultation of the public is witnessed, mainly in the Sluis Eefde project, but real participation is in none of the cases witnessed. As a result, the use of local knowledge is restricted too as it is not proactively obtained through participation and the local community is not able to make a difference to the quality of their places. Some sensitivity to the aspect of local knowledge can be witnessed though as it helped to reframe the project team's image of the project or reactively changed some details of the project. Next to that, it was effectively used to deal with protected birds in two cases and to find a proper solution to the historical objects of the NHW. The relationships encountered in the projects greatly varied and some prerequisites are encountered that

are necessary to establish a good relationship (see figure 28). The cases clearly showed that good relationships foster the smooth implementation of a project and opens up avenues to search for and exploit chances. Despite having conflicting interests relationships can still be good, stimulating a constructive cooperation, as was shown in the Beatrixsluizen project. But, it was also witnessed that despite investments some relationships remain difficult and do not easily change. The positive experiences with institutional capacity-building shows that it offers the right governance style needed to successfully exert an area-oriented development. It stimulates successful cooperation and community involvement and therefore attributes to the (social) sustainable and integrated development of infrastructure. However, it is also shown that Rijkswaterstaat has not adopted such a governance style, which partly explains the results on the spatial-functional dimension.

Figure 28: factors that stimulate successful cooperation as derived from the results of the case studies

3. *Which common factors can be distinguished that hamper the adoption of area-oriented practices?*

Looking at the three case studies, several common factors can be distinguished that work against or promote the use of area-oriented practices. First of all, an issue that bothered a lot of the interviewees was the definition of the exact role of Rijkswaterstaat. Liveability has recently become part of Rijkswaterstaat's mission statement and via all kinds of ways it is stated that Rijkswaterstaat is in favour of sustainable development and area-oriented planning. However, this is not retrievable in the control of the project which focuses on the scope of the project. This same dichotomy is found in the business plan of Rijkswaterstaat (Ondernemingsplan 2015), in which it on the one hand states to focus on a closer cooperation with local governments, coherence between spatial functions and sustainable development, but on the other hand also aims to deliver their products in time and on budget. Although both sides do not necessarily interfere with each other, the focus in practice is on the project's scope and part of the problem therefore lies with the board of directors and the project principals. As a result, project team members who are willing to do more are restricted by their scope and other project team members are not stimulated to go beyond the scope of the project. Since the exact role of Rijkswaterstaat is vague for its own employees, it is even more vague for other parties.

Since infrastructure projects have had to deal with budget cuts and projects are controlled on staying within budget and time there is little or no money and extra capacity available for more integrated solutions. This proves to be frustrating when looking for chances to create extra value and makes cooperation more difficult. Money is only available as it serves a Rijkswaterstaat objective, even though more desirable solutions are available or the overall social benefits may be bigger. Rijkswaterstaat is still sometimes perceived as the organisation with a big pile of money, which is partially understandable. It intrudes into a certain area with a huge investment but has almost no money available to achieve some local benefits. It is a worrisome conclusion, especially as Rijkswaterstaat's budget is shrinking and becomes more and more dependent on its environment.

Aside from money and responsibility issues, another key factor in the adoption of area-oriented planning is the governance style used. Area-oriented planning is based upon a collaborative effort and a governance style that focusses on cooperation is vital. As encountered in the examined projects, several prerequisites are necessary for a successful cooperation (see figure 28). A governance style based on institutional capacity-building is necessary to execute collaborative planning and helps to meet the encountered prerequisites for successful cooperation. However, such a governance style is currently not adopted by Rijkswaterstaat and therefore forms an important factor that hampers the adoption of area-oriented planning. Rijkswaterstaat largely relies on institutionilized forms of participation and cooperation is largely risk-based. Since the project's performance on the spatial-functional dimension is largely dependent of these collaborative efforts, the results of the Omgevingswijzers are not surprising considering the governance style used in the projects.

7.3. General conclusion

Now we have answered the sub questions we can turn towards the main research question. As a result of this multiple-case study research we can conclude that area-oriented planning is far from completely embedded in the policy planning and implementation of lock projects in the Netherlands. 'Far from completely' does not mean 'entirely not', since in all project several promising events can be witnessed. As was indicated by most interviewees, the local environment has gained much more attention in the past decade. The emergence of stakeholder analyses, environs management, Client Demand Specifications and Ambition documents all confirm this development. However, this does not deliver more than just a promising beginning.

Considering the spatial-functional dimension, the three Omgevingswijzers clearly show that the projects are far from integrated and economic and transport motifs clearly prevail. Furthermore, extra value is sparsely created and interests are often not linked. The projects therefore do not contribute to an improvement of the quality of the area. Looking at the organizational arrangements dimension, Rijkswaterstaat has not adopted a governance style that fosters an area-oriented approach. Area-oriented development requires a collaborative effort, which is fuelled by institutional capacity. The benefits of building institutional capacity are shown by the case studies but Rijkswaterstaat largely fails to make use of it. Through integrative place-making stakeholders can be united and it can help to direct actions, as was initially shown by Sluis Eefde as the 'most sustainable lock of the world'. It also involves collaboration in policy making, stimulating the ownership of plans and combining development powers. However, instead of combining development powers, authorities are mainly competing and cooperation is often based on the promotion of self-interest. The lock projects pay attention to the surrounding and future developments but merely to align and to secure their own interest. Some successful cooperations are witnessed though, but these originate from a potential risk and are thus risk-oriented instead of chance-oriented. The inclusive involvement of stakeholders can deliver support, context specific knowledge, creativity and potentially also development powers. However, an instrumental approach to participation is deliberately chosen in all projects and private parties are only limited involved. As a result, communities can not actively participate in shaping their own places and the powers of the 'energetic society' are not exploited. Finally, cooperation is strongly influenced by the relationship between the parties. The differences in the relationships with stakeholders have clearly shown that it is vital for a productive cooperation to establish a good relationship in which trust and understanding prevail. As area-oriented planning is based upon a collaborative effort, the failure to build institutional capacity has strongly influenced the outcomes of the spatial-functional dimension.

Another explanation lies within the project's control. Projects are controlled on staying within budget and time and not on whether it is sustainable or manages to achieve extra value. This is contradicting to what Rijkswaterstaat states in its business plan. It states to strive for sustainable development and the enhancement of the spatial quality, which is even part of its mission statement. The project's control therefore forms an internal obstacle in the adoption of area-oriented planning. To prevent losing its credibility and to stimulate area-oriented planning the directors of Rijkswaterstaat should put their money where their mouths are. The current dichotomy makes it difficult for employees of

Rijkswaterstaat to determine their exact role and also confuses other stakeholders. Some ambassadors of area-oriented planning are found who dare to cross border, but they are severely obstructed by their principals.

We can conclude that a paradigm shift towards the integrated and sustainable planning of locks has not taken place yet and area-oriented planning is not adopted. Stimuli to follow an area-oriented approach are though witnessed in all three projects and this specific niche of infrastructure seems to be very well suited for such an area-oriented approach due to its multi-functional character. As the spatial impact of the Zuid-Willemsvaart was far bigger than the other two projects it was expected to results in a more integrated project. It indeed showed a higher awareness of the spatial impacts and an area-oriented approach was deliberately chosen. However, this does not guarantee a successful area-oriented development, as was shown by the results. In the other projects it was actually their environment that stimulated a broader vision, despite the limited spatial impact. These stimuli are promising and stress the necessity to adopt area-oriented planning practices. As is shown by this research, the planning of locks still has a long way to go to became sustainable and integrated. However, if Rijkswaterstaat manages to determine and express its role more clearly and adopts a governance style with attention for institutional capacity-building, a paradigm shift can possibly take place in the near future.

Chapter 8: Recommendations

In this final chapter several recommendations are stated, based on the research findings. The recommendations are mainly directed at the organisation of Rijkswaterstaat but it is not unthinkable they can be of value to other governmental organisations dealing with planning practices. The last two paragraphs consider the future perspective of area-oriented planning and the recommendations for future research.

Determine the exact role of Rijkswaterstaat

As many project team members indicated to struggle with the exact role of Rijkswaterstaat, it is advisable to define the organisation´s exact role. Rijkswaterstaat pretends to promote sustainable development and area-oriented infrastructure development, and liveability is part of its mission statement. This is however somewhat contradicting to what the findings of the case studies present, as their objective is the achievement of transport benefits and they are controlled on staying within budget and time. The liveability objective therefore remains a vague, grey area which leads to confusion among its employees and partners. As the discussion of the results shows, it is not easy draw the line. It is therefore necessary to take a clear decision, a task especially for Rijkswaterstaat's top managers. They seem to have two options to deal with the current dynamics in infrastructure planning:

1. When Rijkswaterstaat really would like to strive for sustainable development and the improvement of liveability it should assign the necessary funds and capacities and incorporate it into the project's objectives, as ambitions without the necessary commitment might even be more harmful than beneficial. Control should therefore not focus on budget and time, but on the successful implementation of an area-oriented development or sustainability indicators. Ambassadors of area-oriented planning should receive the freedom from their principals to operate, while others should be actively stimulated. Rijkswaterstaat has to accept that benefits may not be entirely of value to the traditional interests of Rijkswaterstaat but may be beneficial for the greater good. The broad involvement of stakeholders and the creation of extra value may demand an initial higher investment concerning money and capacity but this eventually results in a greater societal value of the project. Some examples from the case studies proof that Rijkswaterstaat is capable of executing such processes. Such processes are however currently not stimulated and it is therefore mainly the task of the higher levels of organisation to change this.

2. As Rijkswaterstaat cannot or does not want to assign the necessary funds and capacity or wants to stick to its traditional role, it should take a backward stance. But, this does not mean it can not promote sustainable planning. By taking a backward stance it should invite others (governments, private parties, communities) to join in and help to improve the plan. It follows the principles of invitation planning (van Rooy, 2011). A good example is the so-called 'exchange-decision', which was used in the river widening program. Local governments were invited to improve the national plan for the river widening measures in their area and to make it more attractive for the region, staying within a certain framework (Hajer, 2011). Regional plans

were then judged and replaced the national plans when they indeed proved to be more beneficial. A positive side effect is the fact that it does not make the project unnecessarily complex. As others see no reason to participate or to improve the project Rijkswaterstaat can focus on its own objectives. Adopting such a strategy however comes at a cost. Rijkswaterstaat has to be flexible to incorporate local initiatives and has to accept that these might not be beneficial or even slightly go at the expense of their objective. It also means a greater dependency on others. Since Rijkswaterstaat's budget is declining and the number of employees has to decrease, this strategy might be worth to consider.

Use of institutional capacity

Aside from the funds, capacity and commitment, adopting the right governance style is another key recommendation to come to the area-oriented planning of locks. Area-oriented planning requires a collaborative effort and the results of this research have shown how institutional capacity-building can aid these collaborative processes. It is also shown that Rijkswaterstaat currently does not effectively builds institutional capacity and should therefore change its governance style into one that focuses on building institutional capacity. The five aspect of Healey (1998) clearly present a way to do so. Practically this means that Rijkswaterstaat should involve a wide range of stakeholders and interests into shaping the project's plan to come to *integrative place-making.* This will enlarge the project's support, unite the involved actors and stimulate a sense of ownership. *Collaboration in policy-making* should be based on a common interest and should make use of the development powers and abilities which the various actors possess. Current cooperation is largely based on dependency and risk, with the aim to decrease this dependency or risk. Instead of focusing on what one is responsible for, cooperation should focus on what one is capable of. Next to that, instead of just using participation to increase the projects efficiency, it should also be used to increase the project's legitimacy. Through the *inclusive involvement of stakeholders* local communities and private parties can contribute to the project, creating support and bringing in additional development powers. The Sluis Eefde project clearly showed the creativity of a community and their desire to shape their own places. This also enables the project to use the *local knowledge*, stimulating a proper connection of the project with the local perception of the area and project. Finally, it is important *to build relations* in which trust and understanding prevail. This requires sensitivity to the other´s interest and culture and an open attitude. A promising approach is the measurement of citizens satisfaction, as was done in a recent highway-widening project, stimulating both Rijkswaterstaat and the contractor to well-inform the public and give them the necessary attention.

Future perspective

The future perspective of area-oriented planning of locks is promising. Most interviewees acknowledge the importance of adopting area-oriented planning to a certain degree, although some others have their

doubts. It is stated that area-oriented planning is still in its infancy in the organization of Rijkswaterstaat and 'we' have to learn how to deal with developments like the adoption of liveability in the mission statement. Just like natural values, it is difficult to convince decision-makers to take such values into account as they cannot be expressed in money. Over the past years the project's environment has received much more attention, as was indicated by several interviewees. This is largely institutionalized via formal procedures and documents, such as the emergence of environs management and the collection of client demands. Some see it even as ongoing and already started process.

'I think it is almost a natural process, considering the way we currently have worked over the past 10-15 years. So this [area-oriented planning] is actually a logical next step, which is already taking place.'- Respondent K

The interviewees showed a clear awareness of the complexity of the projects, which certainly plays a role in the considerations they make, for example about participation. As they are mainly controlled on staying within their scope it is obvious they seek to increase their project's efficiency. This awareness is however a good sign, as one of the interviewees said, area-oriented development is development exactly on the right scale. Unlike for instance large road projects, lock projects are probably not suited for large-scale area developments as it would make the projects unnecessarily complex, but it can still benefit from an area-oriented approach. Determining the right scale is therefore very important.

The shrinking budgets and attached lower capacities form a potential threat to area-oriented planning in the future. It might stimulate an even stronger focus on budget and the retrenchment of projects. On the other side, it can stimulate closer cooperation as it will increase the dependencies on for example other governments. Next to that, it might lead to some interesting cooperations based on co-funding.

Looking at the development of sustainable infrastructure, a mindshift is clearly necessary. As the results showed, the case study projects are unsustainable and only deal with some minor measures on energy-use and construction materials. Sustainable development is a clear societal demand and entails much more than the reduction of energy-use. Therefore, a mindshift is necessary towards a more inclusive perspective, such as social sustainability. Such a perspective frames sustainability as a social condition and presents a much richer perspective than for example the triple bottom line. It is in line with the adoption of area-oriented planning as it pays attention to aspect of culture and politics. Whether this mindshift will take place in the near-future is questionable but the adoption of a governance style based on institutional capacity-building will surely improve the project's performance on social sustainability.

Whether the developments of more attention for the project's environment indeed continue and eventually result in the full adoption of area-oriented planning remains the question. The fact is that a paradigm shift towards integrated and sustainable lock planning has not yet taken place. Some signs are however positive and there are enough starting points to start such processes. However, there is still a long way to go and only through the changes as described in the recommendations and continuous efforts such a transition can eventually take place.

Recommendations for future research

Since area-oriented development is regarded to be still in its infancy, even in road projects, it will be very interesting to see how the approach develops and especially what future experiences are. Will it indeed manage to live up to its expectations and enhance the development of true integrated and sustainable infrastructure? More research on projects will be necessary to distinguish common factors and to learn how to effectively implement such projects. Research should not only focus on road projects but also on other types of infrastructure, such as navigation locks, especially since a large renewal wave is coming up of lock projects between 2020 and 2040. Special attention should be paid to the governance style used, as it holds the key towards a successful implementation of area-oriented planning. Based on results of this multiple case study research, an approach aimed at building institutional capacity can enhance the execution of area-oriented planning. It will be interesting to examine if it indeed results in the (social) sustainable development of infrastructure when such a governance style is deliberately followed in a project. Something attached to this which might be interesting to examine more in depth is the emergence and the adoption or cancellation of certain ambitions. Sluis Eefde certainly provides an interesting case in which ambitions were gradually downgraded. Some reasons are found but it might be interesting to investigate such processes more in-depth in order to learn how we can make sure we set challenging but realistic ambitions.

Another interesting path to explore is the effect of DBFM contracts on the area-oriented planning of locks. Two of the case studies belonged to the first DBFM contracts in waterway projects, so it will be very interesting to see what the effect will be on these projects. According to Heeres et al. (2012) and Lenferink & Arts (2009) DBFM contracts can bring financial benefits and can potentially be of great value to area-oriented planning. The experiences of interviewees however give variable impressions of the use of DBFM contracts in lock projects. The MEAT-criteria certainly offer a good chance to challenge applicants to do more and pay attention to project's environment. But, the MEAT-criteria do not have to be met since they only deliver a certain discount and it is the only chance to include some innovations for the next thirty years. Attached to the use of DBFM contracts is the funding-question. It is indicated that Rijkswaterstaat's funds are shrinking, putting pressure on its development and maintenance activities. How can we guarantee a reliable and modern infrastructure network in the future with lower funds? It requires an exploration of alternative ways to fund infrastructure, for example through DBFM-Operate contracts or co-funding.

Finally, as the Omgevingswijzer is nearing its organizational-wide implementation and becoming a standard tool used in projects, it will be very interesting to see what the effects of the tool are on the planning outcomes. It assesses the projects but does it also stimulates projects to strive for improvements? Research on the implementation of the tool is therefore recommended and can contribute to the ongoing improvement of the tool and enlarge its influence on planning practices.

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Annex I: Review of the Omgevingswijzer

As the Omgevingswijzer is still under development at Rijkswaterstaat, it is valuable to critical reflect upon its use in this research. First of all, it is necessary to stress the fact that the tool is developed to be used during a group meeting, contrary to its application in this research. Its value for a project therefore does not entirely lies in the assessment of the project's performance, but it also works as an eye-opener and starts a discussion with the involved stakeholders about the project's performance.

The strength of the Omgevingswijzer is its ability to visually present the effects of a project, showing its positive and negative aspects at a glance. This was also acknowledged by some of the interviewees and also by Heeres et al. (2012). It also helps to consider 'forgotten' or overlooked aspects and therefore stimulates a broad vision and integration. It quickly shows the project's goals and ambitions, and can help to set ambitions and monitor them. The Omgevingswijzer of respondent F of the Sluis Eefde clearly shows the project's ambitions and comparison with the current state quickly shows the degradation of these ambitions. Furthermore, by going through all the different aspects, negative effects become clear too, stimulating the search for an alternative solution. Its value to this specific research lies in the systematic analysis of a project and the very clear presentation of the project's effects. It has therefore undoubtedly been of great value to this research.

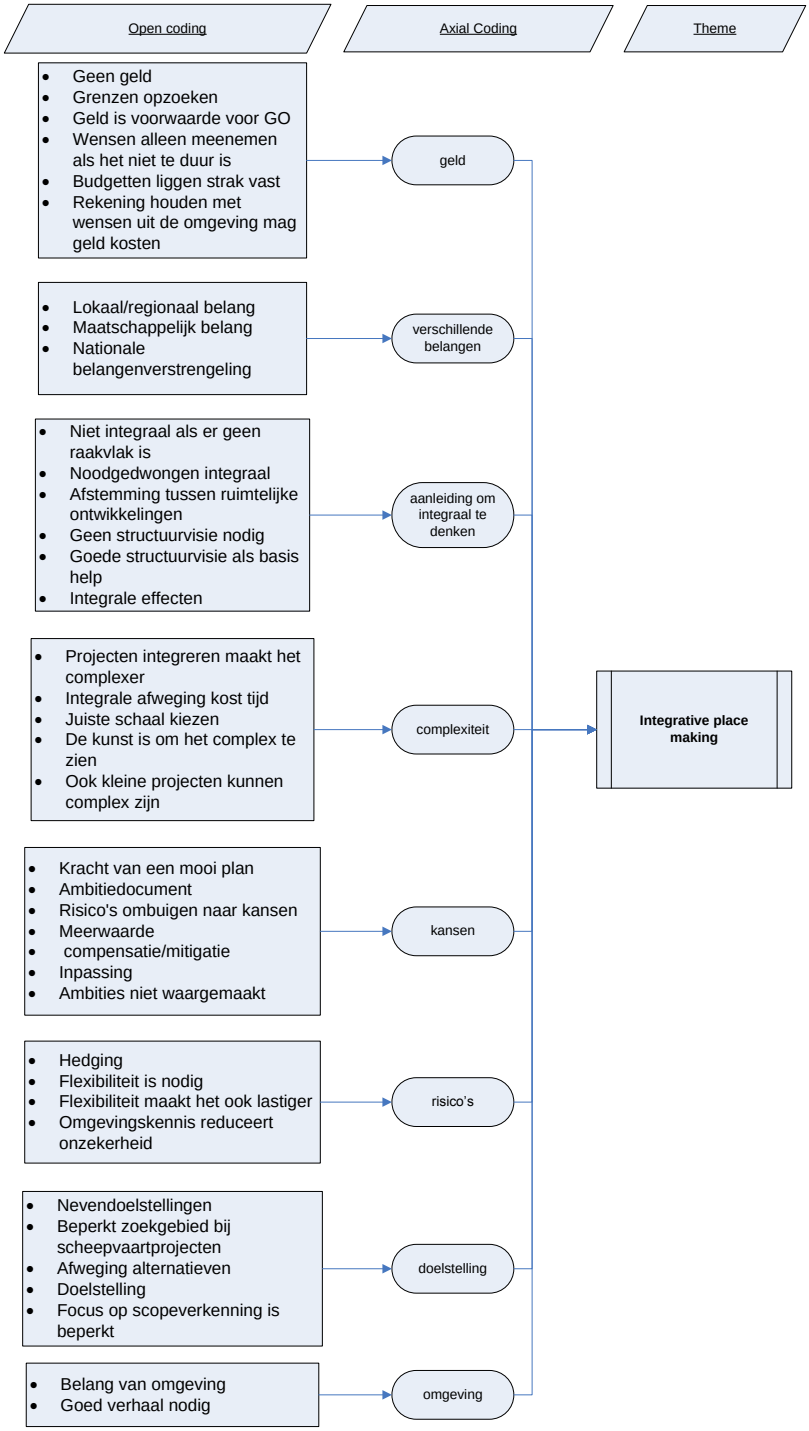
However, the tool possesses some downsides too, as was experienced during its application. First of all, the tool demands a high level of detail and features some vague terms, as was perceived by some of the interviewees. The high level of detail can be a problem when using the tool in a group session, but was not a real problem during this research as various documents presented the necessary data. The vagueness of some of the questions was a bigger issue, especially as it relies on qualitative data. As some of the sub questions that make up the tool are not well-defined, they are prone to subjectivity. For instance, the aspect of 'ecology and biodiversity' consists of three sub questions about habitat, biodiversity and ecological structures. It seems that all three sub questions deal with the consistency of habitat, especially as biodiversity is defined as 'the biodiversity of flora and fauna is improved by a heterogeneous structure of the landscape'. However, even when the questions are well-defined it remains difficult to answer them objectively in some cases, as different perceptions are possible. This critique is shared by Franssen (2013), who also points at the fact that the questions are not weighted. However, it is not the aim of the tool to weigh several effects of a project and especially aims to involve minor aspects. On the other hand, it is therefore also not possible to quantify synergies, which can be a difficulty in defending them. When using the tool in a group session subjectivity might be less of a problem, although positive perceptions can shadow negative effects. Another point of critique concerns the difficulties in showing negative effects on certain aspects. For instance, it is hard to score negative on the aspect of 'public attractiveness'. The inability to score negative does not stimulate to do more to achieve benefits on these aspects. Moreover, quite some questions proved to be irrelevant to the project. Approximately a quarter of the questions were not applicable to lock projects. It is probably a deliberate choice to design a general tool, but it might be valuable to consider a version that is fit to infrastructure projects. Something else to consider is the alignment with social sustainability. The Omgevingswijzer clearly offers a broad perspective, based on the aspect of People, Planet & Profit. This

perspective can however be enriched by social sustainability as it introduces the aspects of culture and politics and therefore strengthens the social dimension of sustainability. Looking at the current dominance of the economic aspect and the lack of attention for the social dimension, this might help to promote the importance of the social dimension.

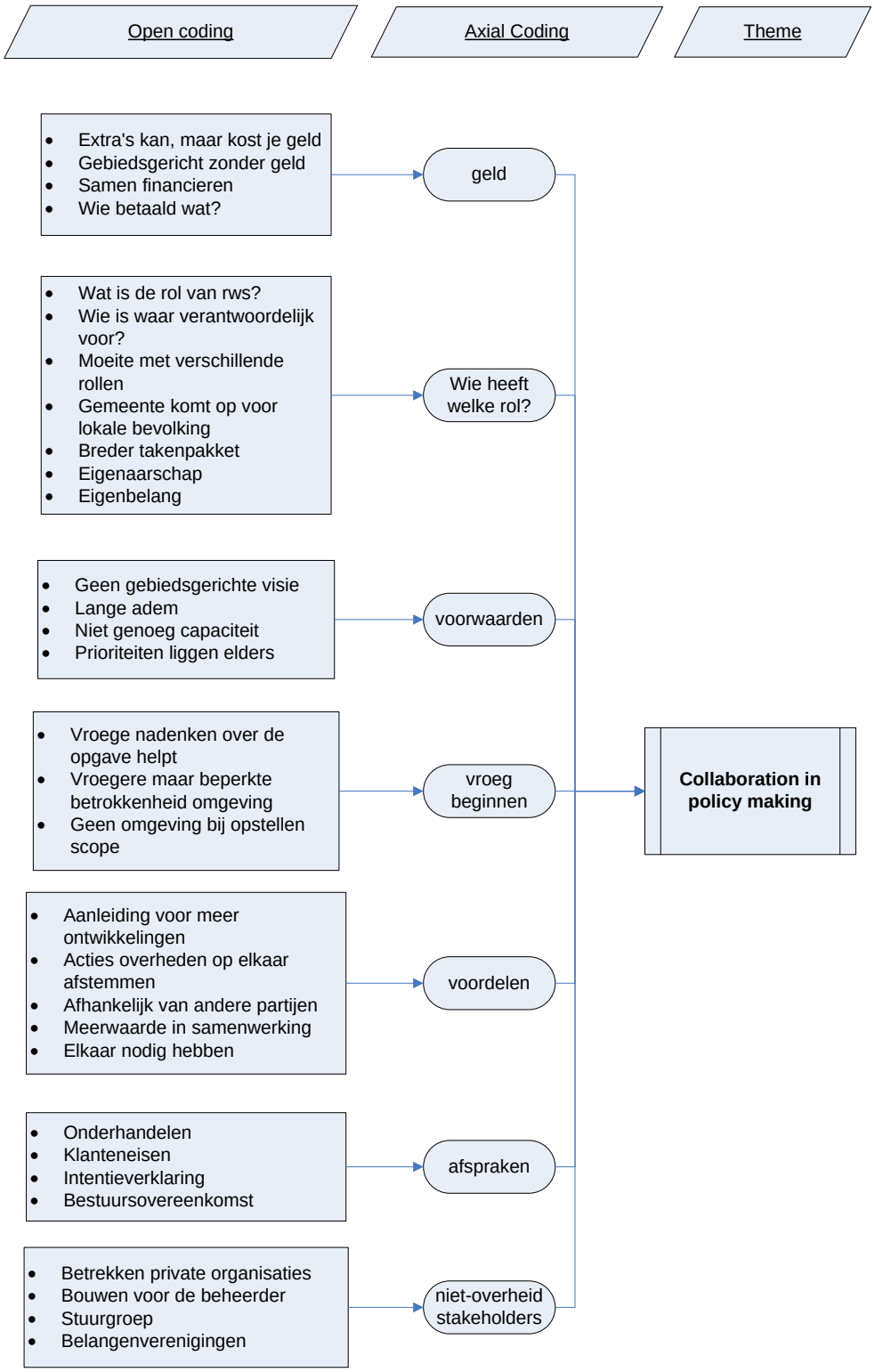
It will be very interesting to see how the tool will develop during the coming years as it becomes a standard tool for projects of Rijkswaterstaat. Based on the experiences with the tool, four recommendations can be distinguished. First of all, the definition of some sub questions has to improve. The indistinctness of some questions demotivates users and will decrease their appreciation of the tool. Furthermore, some questions are irrelevant to certain projects. This is not a problem concerning the result of the tool, but it limits the awarded value of the tool to someone's project. As the tool seems irrelevant on certain aspects, the tools seems to be designed for different projects and its use and results are therefore perceived as less relevant to someone's project. Making a distinction between infrastructure and urban developments may take away most of the irrelevant questions and is therefore valuable to consider. Thirdly, it can especially be of value when it is used continuously through the different phases of a project. It can not only monitor the project's performance but also motivate to strive for improvements. What is currently missing is a clear visualization of achieved improvements or synergies. Finally, as the tool aims to stimulate sustainable development it is recommended to align with the richer definition of social sustainability. Doing this will offer a even broader perspective on projects and will promote the social dimension of sustainability, an aspect that is currently largely overlooked.

Annex II: Coding schemes

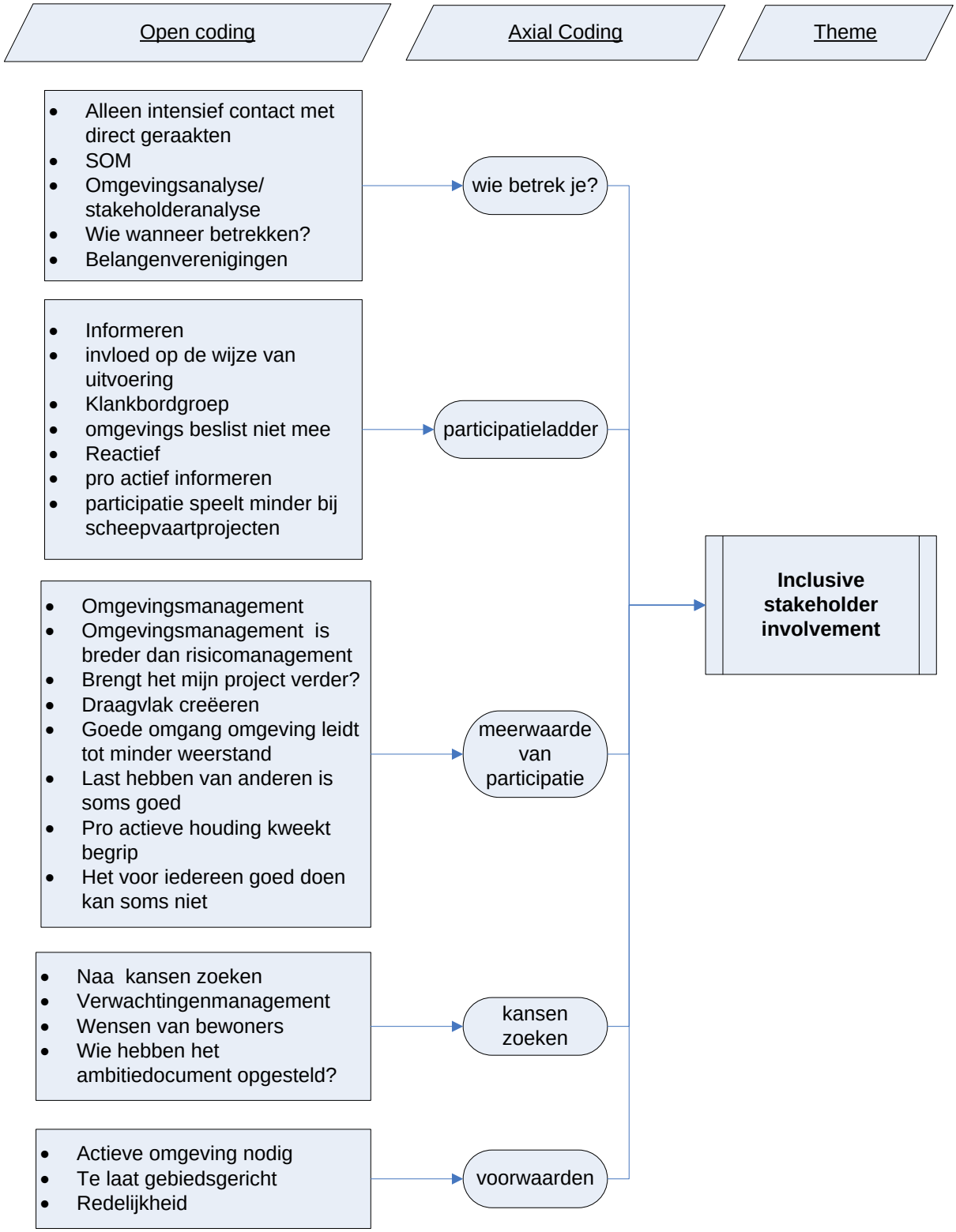
Coding scheme integrative place-making



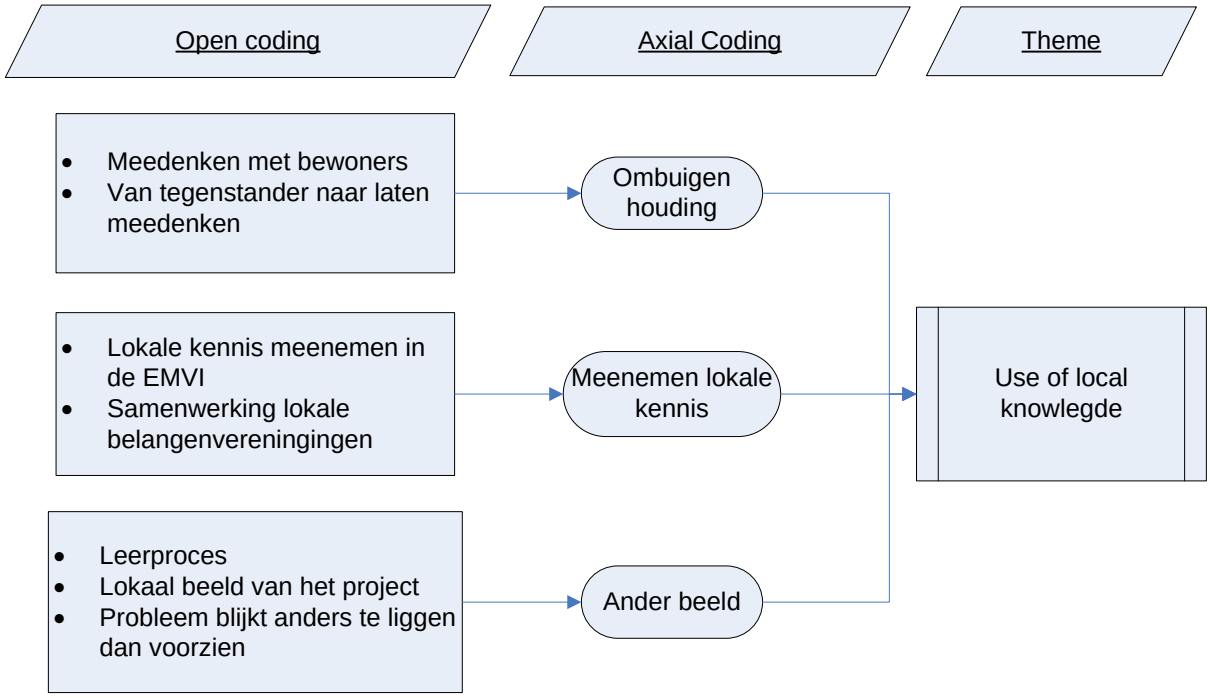
Coding scheme collaboration in policy making



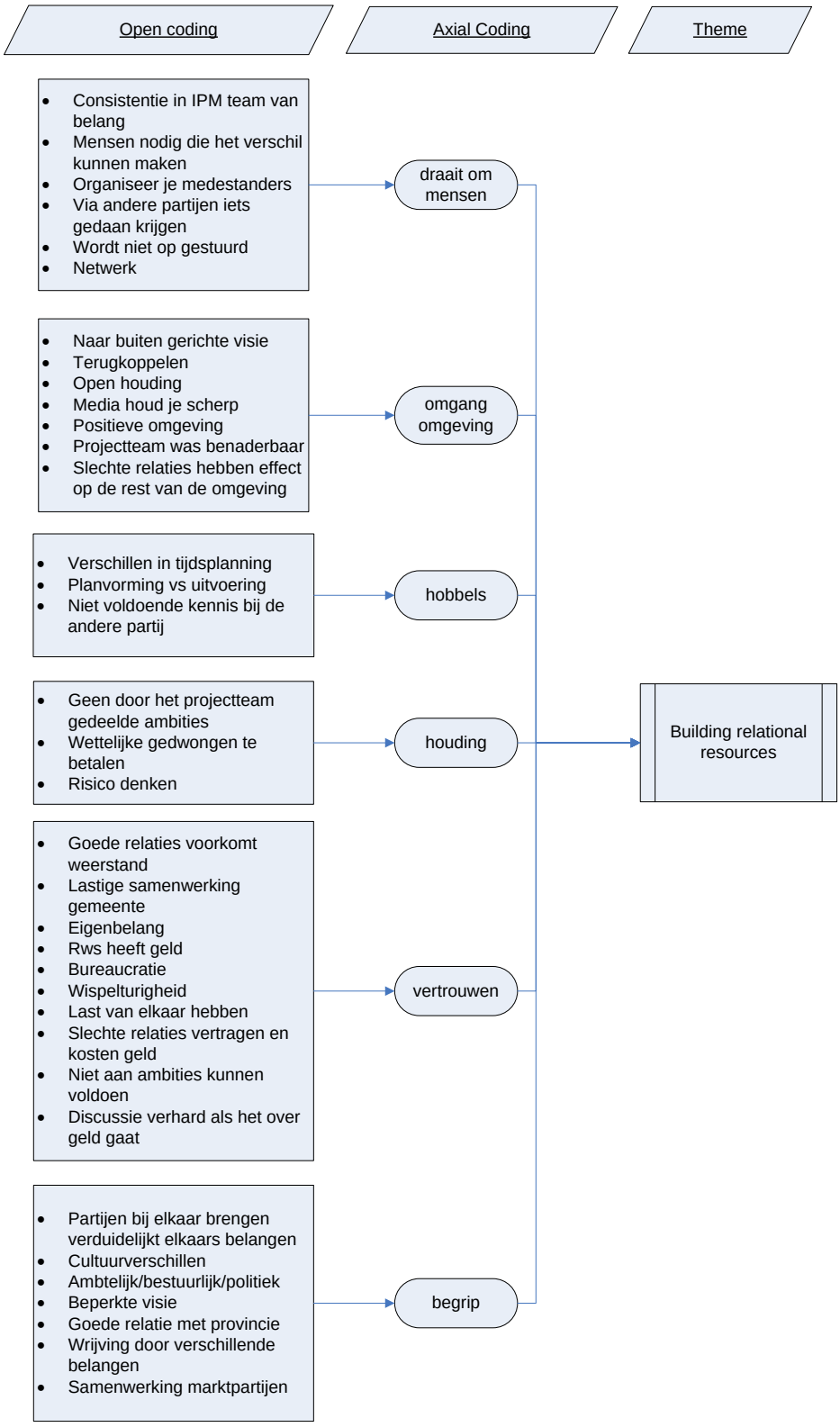
Coding scheme inclusive stakeholder involvement



Coding scheme use of local knowledge



Coding scheme building relational resources



Annex III: Interview guide

Introductie

Openingsvragen

- teaser: hoe zou u dit project promoten?
- Kunt u mij kort (in een paar zinnen) vertellen wat de **aanleiding** was van dit project?
  - Waarop gebaseerd, uiteindelijke **doelstelling**
- Kunt u mij een beknopte schets geven van het **besluitvormingsproces**?
  - Sleutelmomenten, koerswijzigingen, grootste hobbels

Beeld

- Hoe zag RWS in 1e instantie het project?
  - Hoe werd het ontvangen? Verandert?
- Bestonden er andere visies op het gebied of project?
  - Wie bij welk beeld? Hoe bij elkaar gebracht?
- Was er sprake van een integrale visie die leidraad vormde voor het proces?

Samenwerking stakeholders

- Hoe is er samengewerkt met andere stakeholders?
  - Stakeholderanalyse, wie? Wanneer? Actief benadert?
- Welke rol speelde **publieke participatie**?
  - Meer dan **wettig** noodzakelijk? Nut of noodzaak?
  - **Lokale kennis**, hoe meegenomen? **Rol** in verdere besluitvorming?
- Hoe was de relatie met de stakeholders?
  - Vertrouwen, netwerk, leren?
- Wie waren er **eigenaar**/bedenkers van de 'oplossing'?

Samenwerking overheid

- Gemeente en Provincie zijn al vanaf het begin betrokken, hoe is de samenwerking met hun verlopen?
  - Meedenken en beslissen of alleen meekijken?
  - Conflicting or complimentary
  - Combinatie van **opgaven**? / andere ruimtelijke ontwikkelingen?
- Zou je de gemeente of provincie het initiatief kunnen laten nemen?

Meerwaarde

- Waren de belangen van andere partijen vooral in strijd met elkaar of konden ze zich ook punten versterken?
- Is er bewust **gezocht naar** het creëren van **meerwaarde**?
  - Hoe? Waarom wel/niet, daadwerkelijk gerealiseerd, ambitiedocument?
- Wat voor kansen liggen er voor de markt?
  - **EMVI criteria**

Veranderingen afgelopen decennia

- Welke **veranderingen** zijn er merkbaar in de uitvoering van sluis-projecten?
  - Duurzaamheid, sectoraal, rol overheid, stakeholders

Complexiteit

- Vindt u dat de **huidige maatschappij** meer onvoorspelbaar is geworden?
    - tijd
- Hoe gaat **RWS om met onzekerheden**, onverwachte gebeurtenissen en de vele verschillende belangen tijdens een project?
    - voorspellingen, meer complexiteit een voordeel, bewuste keuze

Doorlopen omgevingswijzer

- voorwaarden vanuit Rijksbeleid: droge voeten, voldoende schoon water
    - welke ambities hadden jullie in het begin?

Gebiedsgerichte planning

- Wat verstaat u onder een gebiedsgerichte aanpak?
- Wordt het **gestimuleerd**?
    - Welke instrumenten worden er aangeboden? Of staan in de weg?
- In hoeverre acht u een gebiedsgerichte benadering **waardevol** voor sluis projecten?
    - Dit project, kansen

Afsluiting:

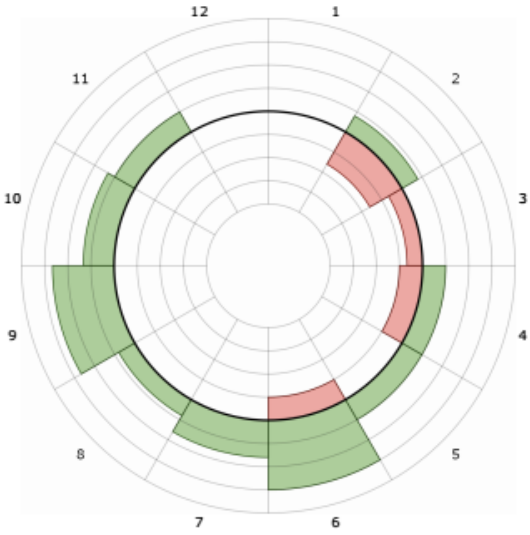
- Wat zou u anders hebben gedaan met de kennis van nu?

Annex IV: Omgevingswijzer questionares

Omgevingswijzer questionare Beatrixsluizen

Rijkswaterstaat
Ministerie van Infrastructuur en Milieu

Omgevingswijzer omgevingswijzer.org



Project: BXS officieel

1. Water

Om een duurzame en veilige leefomgeving te creëren in Nederland, hebben we een duurzame en klimaatbestendige bescherming nodig tegen oa zeewater, rivierwater, grondwater en regenwater. Hierdoor kunnen we de waterveiligheid waarborgen van overstroombare gebieden. Om het comfort en gebruik van water te waarborgen is het belangrijk wateroverlast te voorkomen. Hiervoor dient het water zo lang mogelijk vastgehouden te worden. Om een tekort aan zoetwater zoveel mogelijk tegen te gaan, zijn verdringingsreeksen opgesteld die duidelijkheid geven over de waterverdeling in tijden van schaarste.

A. Waterveiligheid

Verbetering van de waterveiligheid wordt gerealiseerd door middel van de 3-lagen-benadering: 1. Kans beperken, 2. Gevolgen beperken en 3. Herstel bevorderen (Helpdesk Water, Rijkswaterstaat, 2009).

Toelichting *Dijkveiligheid moet eventueel worden verhoogd a.g.v. deltaprogramma, dit is nog niet zeker en wordt het doorgeschoven naar de contractfase. Verder wordt de dekzerkhoogte lager uitgevoerd a.g.v. versoberingen.*

Effect: ~~Positief~~ Geen ~~Negatief~~

B. Wateroverlast

Wateroverlast wordt voorkomen door 1. Water vasthouden 2. Water bergen en 3. Water afvoeren (Helpdesk Water).

Toelichting *Geen significant effect op de waterhuishouding of waterverdeling (MER 2014)*

Effect: ~~Positief~~ Geen ~~Negatief~~

C. Waterkwaliteit

De waterkwaliteit wordt verbeterd. Denk hierbij aan: 1. Schoon water schoon houden 2. Scheiden van vuil en schoon 3. Schoonmaken wat verontreinigd is en 4. Natuurlijke inrichting (rietkragen) (Helpdesk Water).

Toelichting *Enkele kleine positieve en negatieve effecten zodat het totale effect gering is (MER 2014)*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

D. Watertekort

Een mogelijk zoetwatertekort wordt tegengegaan door het realiseren van een regionale zelfvoorzienendheid en optimalisatie van de waterverdeling volgens de verdringingsreeks (Helpdesk Water).

Toelichting *Geen significant effect op de waterhuishouding of waterverdeling (MER 2014)*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

E. Klimaatbestendigheid

De klimaatbestendigheid van het watersysteem in zijn omgeving wordt vergroot door aanpassing aan (adaptatie) en/of verzachting van (mitigatie) eventuele negatieve gevolgen van klimaatverandering.

Toelichting *Primaire waterkering wordt voorlopig op bestaande niveau aangelegd (MER 2014)*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

2. Bodem

De bodem faciliteert onze activiteiten, maar is kwetsbare en negatieve ontwikkelingen zijn moeilijk te keren. Een duurzaam omgaan met de bodem is daarom van essentieel belang voor ruimtelijke ontwikkelingen. De bodemkwaliteit is van belang voor de basisfuncties van de bodem (het dragen van constructies, het informeren over landschapshistorie, reguleren van mogelijke effecten en productie van middelen). Ook diversiteit in bodemtypes en ondergrondse flora en fauna dragen bij aan een bestendiger en flexibeler systeem. Archeologisch waardevolle objecten dienen zo lang mogelijk in de bodem te worden behouden om hun waarde zo groot mogelijk te houden. Als laatste dient bodemdaling te worden voorkomen.

A. Bodemkwaliteit

De bodemkwaliteit wordt verbeterd door het verbeteren van de vier functies van de bodem: Dragen, informeren, reguleren, produceren (Ministerie van I&M: www.ruimtexmilieu.nl).

Toelichting *verontreiniging in zowel land- als waterbodems wordt verwijderd (MER 2014)*

Effect: **Positief** ~~Geen~~ ~~Negatief~~

B. Bodemdiversiteit

De diversiteit aan bodemtypes wordt in stand gehouden en zeldzame bodemtypes worden behouden.

Toelichting *Geen effect (MER 2014)*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

C. Bodembiodiversiteit

De bodembiodiversiteit (de diversiteit van flora en fauna in de bodem) en grootte van ondergrondse populaties wordt vergroot.

Toelichting *onbekend*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

D. Archeologische waarden

De in de bodem aanwezige archeologische waardevolle objecten, structuren en patronen worden in situ bewaard en zo nodig beschermd (Rijksdienst voor het Cultureel erfgoed).

Toelichting *door schade aan de NHW en bodems met hoge archeologische waarden (MER 2014)*

Effect: ~~Positief~~ ~~Geen~~ **Negatief**

E. Bodemdaling

Bodemdaling wordt voorkomen ten gunste van bijvoorbeeld de waterveiligheid en behoud van bouwwerken.

Toelichting *Zettingen volgens MER 2004, MER 2014 spreekt over mogelijk openbarsten van bodems als gevolg hier van.*

Effect: ~~Positief~~ ~~Geen~~ **Negatief**

3. Energie en materialen

Voor een duurzaam en minder afhankelijk energiesysteem is een sluitend systeem van energieproductie en energievraag nodig. De Trias Energetica geeft aan hoe we onze energievraag en -aanbod hierop kunnen aanpassen. Als eerste dienen we daarom: 1) onze energievraag te beperken, 2) zoveel mogelijk duurzaam opgewekte energie te gebruiken en 3) fossiele energiebronnen zo efficiënt mogelijk te gebruiken. Schaarste van materialen, benarde arbeidsomstandigheden en milieuschade bij materiaalwinning dient te worden voorkomen.Daarnaast kan er synergie worden behaald worden door het uitwisselen van energie en CO2 tussen verschillende ontwikkelingen. Hiervoor is het belangrijk om vraag en aanbod van energie en CO2 inzichtelijk te maken, zodat bijvoorbeeld restwarmte kan worden hergebruikt. Als laatste is het belangrijk de robuustheid en flexibiliteit van het energienetwerk te vergroten om kans op falen te verkleinen, en daarmee de functionaliteit van het net te vergroten.

A. Vermindering energievraag

Trias Energetica, stap 1: De grootte van de energievraag voor aanleg, gebruik en sloop wordt beperkt. Denk hierbij ook aan grondstof- en materiaalgebruik en het gebruik van passieve energie (DuboCalc, 2012).

Toelichting *Vooralsnog geen maatregelen voor bekend, wel kans dat dit via de aanbesteding alsnog gebeurd*

Effect: ~~Positief~~ Geen ~~Negatief~~

B. Gebruik duurzame energie

Trias Energetica, stap 2: Er wordt gebruik gemaakt van duurzaam opgewekte energie, met in acht nemen van de draagkracht van het natuurlijk systeem.

Toelichting *Mogelijkheden om duurzame energiewinning te combineren zijn onderzocht (Meerwaardescan), maar dit heeft niet tot concrete maatregelen geleid*

Effect: ~~Positief~~ Geen ~~Negatief~~

C. Gebruik fossiele brandstoffen

Trias Energetica, stap 3: Bij toepassen van fossiele energiebronnen worden deze zo efficiënt mogelijk gebruikt.

Toelichting *Vooralsnog geen maatregelen voor bekend, wel kans dat dit via de aanbesteding alsnog gebeurd*

Effect: ~~Positief~~ Geen ~~Negatief~~

D. Gevolgen materiaalwinning

Materialen, waarvan ernstige negatieve gevolgen bekend zijn bij winning en/of productie worden zoveel mogelijk gemeden. Denk hier bijvoorbeeld aan uitputting, arbeidsomstandigheden, sociale omstandigheden en bodemvervuiling.

Toelichting *Veel grondverzet m.a.g. veel uitstoot (MER 2004)*

Effect: ~~Positief~~ ~~Geen~~ Negatief

E. Uitwisseling van energie

Mogelijkheden voor uitwisseling van energie en CO2 tussen functies tijdens de aanleg, gebruik en sloop worden optimaal benut, waardoor energieoverschotten kunnen worden gebruikt buiten de grenzen van het project (CO2 ladder, 2012).

Toelichting *Vooralsnog geen maatregelen voor bekend, wel kans dat dit via de aanbesteding alsnog gebeurd*

Effect: ~~Positief~~ Geen ~~Negatief~~

F. Robuust energiesysteem

De robuustheid van het energienetwerk wordt vergroot ter verbetering van het functioneren van het net, een grotere flexibiliteit in energielevering en reducering van de faalkans.

Toelichting *Geen effect bekend*

Effect: ~~Positief~~ Geen ~~Negatief~~

4. Ecologie en biodiversiteit

Een sterk en flexibel ecosysteem is een belangrijk onderdeel van een bestendige en duurzame leefomgeving. Het is

daarom van groot belang om flora en fauna de volle mogelijkheid te bieden zich te kunnen ontwikkelen. Samenhang in de leefruimte van planten en dieren is hiervoor een belangrijke voorwaarde. Ook kan het verbinden van zowel blauwe als groene ecologische structuren helpen in het stimuleren van de volledige voedselketen. Door afwisseling in het landschap te creëren, kan ook de diversiteit in bloemen- en diersoorten groeien, wat tot een stabieler ecosysteem leidt.

A. Leefruimte planten en dieren

De samenhang in de leefruimtes, broedplaatsen en beschermde gebieden van planten en dieren wordt versterkt en de versnippering van het landschap wordt tegengegaan.

Toelichting *schade aan de EHS wordt ruimschoots gecompenseerd (127%)zodat er een positief effects optreed*

Effect: **Positief** ~~Geen~~ ~~Negatief~~

B. Biodiversiteit

De biodiversiteit van flora en fauna wordt vergroot door een heterogene opbouw van het landschap.

Toelichting *Ondanks ruime EHS compensatie wel schade aan botanisch waardevolle graslanden buiten de EHS en negatief effect op een aantal soorten die onder de flora-en faunawet vallen (MER 2014)*

Effect: ~~Positief~~ ~~Geen~~ **Negatief**

C. Ecologische structuren

Groene ecologische structuren (land) worden versterkt voor flora en fauna om de volledige voedselketen te blijven faciliteren (van plankton tot aaseters).

Toelichting *geen maatregelen bekend*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

Blauwe ecologische structuren (water) worden versterkt voor flora en fauna om de volledige voedselketen te blijven faciliteren.

Toelichting *er wordt wat land omgezet in water maar geen duidelijk effect bekend*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

5. Ruimtegebruik

Omdat ruimte schaars is in Nederland, is het belangrijk dat we beschikbare ruimte zo efficiënt en multifunctioneel mogelijk inrichten. Uitbreiding van bebouwd gebied dient dan ook enkel te worden toegelaten als dat nodig is. Deze duurzame en strategische ontwikkeling van beschikbare ruimte is nodig om leefbare gebieden te ontwikkelen die antwoord geven op huidige en toekomstige gebruikswensen. Bijkomende voordelen hiervan zijn dat dit ook de vraag naar mobiliteit en energiegebruik verkleint en mogelijkheden biedt voor vergroting van de ruimtelijke en ecologische kwaliteiten.De ladder voor Duurzame Verstedelijking (afkomstig uit de SVIR, 2011) biedt een methode dit in drie te stappen te onderzoeken. Als eerste dient te worden onderzocht of de voorgestelde ontwikkelingen voorzien in een regionale bebouwingsvraag, zowel kwantitatief als kwalitatief. Als die vraag aanwezig is, moet worden onderzocht of deze vraag kan worden opgevangen in bestaand stedelijk gebied. Programma dat niet kan worden opgevangen in bestaand gebied dient hierna te worden gepland in uitleggebieden die multimodaal ontsloten zijn.

A. Aansluiting bebouwingsvraag

Het project beantwoordt de regionale vraag naar programma en ruimte, rekening houdend met omringende initiatieven en huisvestingsontwikkelingen (Ladder duurzame verstedelijking, SVIR, 2012).

Toelichting *Project verkleint het oppervlakte woongebied en 2 woningen moeten worden geamoveerd. Daarentegen houdt het (noodgedwongen) sterk rekening met het bedrijventerrein 'het klooster'. Totale effect kan dus als neutraal wordeng beschouwd.*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

B. Gebruik bestaand gebied

Mogelijkheden voor realisatie van de beoogde ontwikkelingen binnen bestaand stedelijk gebied worden optimaal benut dmv bijvoorbeeld opvulling, herbestemming of herstructureren (Ladder duurzame verstedelijking, SVIR, 2012).

Toelichting *Niet mogelijk, wel is verkeersmanagement geoptimaliseerd*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

C. Uitbreiding

Bij uitbreiding buiten bestaand stedelijke gebied, worden mogelijkheden tot multimodale ontsluiting van de nieuwe locatie benut (Ladder duurzame verstedelijking, SVIR, 2012).

Toelichting *Geen directe relatie met het project, wel indirect*

Effect: ~~Positief~~ Geen ~~Negatief~~

D. Meervoudig ruimtegebruik

Mogelijkheden om bestaande of geplande ruimte meervoudig te gebruiken worden optimaal benut.

Toelichting *Recreatieve functie wordt licht versterkt en natuur wordt de NHW wordt met de EHS gecombineerd (MER 2014). Echter, effect had nog veel positiever kunnen zijn, bijvoorbeeld door kansen die bleken uit de meerwaardescan.*

Effect: Positief ~~Geen~~ ~~Negatief~~

6. Ruimtelijke kwaliteit

In samenhang met ons ruimtegebruik, draagt een vergroting van de kwaliteit van ruimte bij aan een duurzame ruimteontwikkeling. Ook bijvoorbeeld de connectiviteit van gebieden, economische kansen en sociale veiligheid kunnen hierdoor vergroot worden. De kwaliteit wordt bepaald door de mate waarin ruimte onze activiteiten ondersteunen en flexibiliteit bieden om in de toekomst aan te kunnen blijven sluiten op veranderende eisen. Volgens Vitruvius bestaat ruimtelijke kwaliteit uit drie onderdelen: 1) Belevingswaarde (waardering, sfeer, identiteit en samenhang), 2) Gebruikswaarde (kwaliteit functies, variatie in grootte en type functies) en 3) Toekomstwaarde (flexibiliteit, anticipatie op toekomstige veranderingen).

A. Belevingswaarde

De belevingswaarde van het gebied, of de mate waarin gebruikers het gebied als positief ervaren, wordt versterkt. Denk hierbij aan bouwkundige elementen met cultuurhistorische waarde, sfeer, aanwezige landschapsstructuren, natuur en ruimtelijke samenhang.

Toelichting *Monumentale karakter van de sluis wordt behouden en de beleving van de objecten van de NHW blijft 'middelhoog' (MER 2014). Daarnaast wordt de recreatieve functie van het gebied licht versterkt.*

Effect: Positief ~~Geen~~ ~~Negatief~~

B. Gebruikswaarde

De gebruikswaarde van het gebied wordt versterkt. Denk hierbij aan vergroting van de kwaliteit van functies en de variatie in grootte en type functies.

Toelichting *Negatief effect op de functies wonen en agrarisch landgebruik, positief effect op de recreatieve functie (MER 2014). Over het algemeen dus een neutraal effect.*

Effect: Positief ~~Geen~~ Negatief

C. Toekomstwaarde

De toekomstwaarde van het gebied wordt vergroot. Denk hierbij aan flexibiliteit in het plan, een strategische aansluiting op zijn omgeving en anticipatie op toekomstige veranderingen.

Toelichting *Geen direct effect op de toekomstwaarde van het omliggende gebied*

Effect: ~~Positief~~ Geen ~~Negatief~~

D. Integraal ontwerp

Bestaande en geplande functies en omringende openbare ruimte zijn in samenhang met elkaar en versterken elkaar door een ruimtelijk integraal ontwerp (Kader Ruimtelijke Kwaliteit en Vormgeving, 2012, Rijkswaterstaat).

Toelichting *o.a. het Ambitiedocument zorgt voor een ruimtelijke integraal ontwerp*

Effect: Positief ~~Geen~~ ~~Negatief~~

7. Sociale relevantie

Voor een duurzame ontwikkeling van ruimte, is het belangrijk dat de ontwikkeling een positief effect heeft op het sociaal welzijn van zijn gebruikers en omwonenden. Hierbij dienen oplossingen te worden geboden voorzowel bestaande als

)

toekomstige gebruikers, met in achtneming van de ruimtelijke gevolgen van demografische trends.Door aansluiting van de ontwikkeling bij zijn gebruikers ontstaat sociaal draagvlak (goedkeuring) en bewustwording voor de ontwikkeling, wat de haalbaarheid helpt vergroten. Het actief inzetten van lokale expertise kan hierbij helpen om lokale behoeftes van de gemeenschap te identificeren.

A. Sociaal welzijn

Het project draagt bij aan het sociaal welzijn van zijn gebruikers, omwonenden en andere betrokken partijen en individuen. Denk hierbij bijvoorbeeld aan de harmonie onder de bevolking en het vermijden van sociale barrièrewerking.

Toelichting *Geen effect, brug over het kanaal/sluis blijft intact. Wel is een fietstunnel onder de A27 geschrapt vanwege versobering*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

B. Demografische samenstelling

Er worden oplossingen geboden voor de ruimtelijke gevolgen en eisen van de huidige aanwezige demografische groepen. Denk hierbij aan programmakeuze en vormgeving van de openbare ruimte.

Toelichting *Geen effect/n.v.t.*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

Er worden oplossingen geboden voor de ruimtelijke gevolgen en eisen van relevante demografische ontwikkelingen (zoals vergrijzing of krimp). Denk hierbij bijvoorbeeld aan flexibiliteit en aanpasbaarheid van programma.

Toelichting *geen effect/n.v.t.*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

C. Sociaal draagvlak

Er is sociaal draagvlak aanwezig voor het project onder toekomstige gebruikers, omwoners en andere betrokken partijen en individuen.

Toelichting *Weerstand vanwege de NHW omgebogen naar draagvlak voor de uitbreiding. Draagvlak onder gebruikers uiteraard ook aanwezig. Omgeving is overwegend positief maar er is beperkt*
contact met de omwonenend, voornamelijk met de direct geraakten

Effect: **Positief** ~~Geen~~ ~~Negatief~~

D. Lokale expertise

Lokale expertise en specifieke kennis wordt verzameld en toegepast, om relevante behoeftes van de gemeenschap te identificeren en potentiële conflicten voor te zijn.

Toelichting *Goed gebruik gemaakt van de 'lokale'kennis van de NHW en van de lokale vogelwerkgroep. Lokale kennis van omwonenden is niet/nauwelijks gebruikt*

Effect: **Positief** ~~Geen~~ ~~Negatief~~

8. Welzijn

Door ruimte zo in te richten dat een positieve bijdrage geleverd kan worden aan het welzijn en de gezondheid van bewoners, gebruikers en bezoekers, ontwikkelen we een duurzame en veilige leefomgeving. Met functies die onze gezondheid bevorderen en uitnodigen tot een gezonde levensstijl dragen we hier aan bij. Ook is het belangrijk onze veiligheid, zowel fysiek als sociaal, te waarborgen. Hinder en overige overlast dienen te worden voorkomen om een aantrekkelijk en leefbaar gebied te creëren.

A. Gezondheid

De te realiseren functies hebben een positieve bijdrage aan de gezondheid van de bewoners en bezoekers en nodigen uit tot een gezonde levensstijl.

Toelichting *Geen effect (MER 2004)*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

Mogelijkheden om gezondheidsrisico's te minimaliseren of verwijderen worden benut. Denk hierbij bijvoorbeeld aan geluidshinder en luchtkwaliteit.

Toelichting *Geen effect (MER 2014)*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

B. Veiligheid

De fysieke veiligheid (lichaam) van de gebruikers en omwonenden van het gebied blijft tijdens de bouw, gebruik en sloop gewaarborgd. Denk hierbij aan bijvoorbeeld verkeersveiligheid.

Toelichting *geen effect op veiligheid omgeving, wel een verbetering van de interne (scheepvaart) veiligheid (MER 2014)*

Effect: **Positief** ~~Geen~~ ~~Negatief~~

De sociale veiligheid (geest) van de gebruikers en omwonenden van het gebied blijft tijdens de bouw, gebruik en sloop gewaarborgd. Denk hierbij bijvoorbeeld aan vermijden van gevoelens van dreiging, agressie of geweld.

Toelichting *geen maatregelen/effecten van bekend*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

C. Hinder

Hinder door externe invloeden wordt voorkomen. Denk hierbij bijvoorbeeld aan trillingshinder, uitstoot van schadelijke stoffen, lichtvervuiling of zichthinder.

Toelichting *Scoort licht negatief in op het gebied van geluidsoverlast maar door toedoen van de aanbesteding kan dit nog veranderen*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

9. Bereikbaarheid

Door de bereikbaarheid van gebieden hoog te houden en gebruikswaarde van infrastructuursystemen te vergroten, kan de toekomstwaarde van een gebied worden vergroot. Bereikbaarheid heeft ook een sterke relatie met thema's als energie, ruimtegebruik, welzijn en economische thema's. Voor een duurzaam bereikbaar gebied is het belangrijk dat een robuust verkeerssysteem wordt ontwikkeld van verschillende vervoersmodaliteiten en knooppunten daartussen. Een efficiënt gebruik van bestaand en nieuwe infrastructuur kan helpen dit te bereiken en te besparen om ruimte, brandstof en tijd. Door een adaptief mobiliteitsbeleid en –netwerk kunnen we blijven inspringen op gewenste en ongewenste ontwikkelingen.

A. Robuust transportsysteem

De mobiliteitsmogelijkheden binnen verschillende verkeersmodaliteiten en overstapmogelijkheden hiertussen worden vergroot (Visie op Knooppunten, 2000).

Toelichting *Bevordert scheepvaartverkeer en daarmee indirect multimodaal vervoer (MER 2014)*

Effect: **Positief** ~~Geen~~ ~~Negatief~~

De betrouwbaarheid van de reismogelijkheden en de voorspelbaarheid van de reistijd wordt vergroot. Denk hierbij aan de reis van deur tot deur (SVIR, Bereikbaarheidsindicatoren).

Toelichting *3e kolk maakt de sluis betrouwbaarder: minder kans op stremmingen bij buiten gebruik raken van een van de sluizen en de wachttijden worden korter en betrouwbaarder*

Effect: **Positief** ~~Geen~~ ~~Negatief~~

B. Efficiënt gebruik infrastructuur

De positionering van programma en functies draagt bij aan de verkleining van de mobiliteitsvraag. Denk hierbij bijvoorbeeld aan dichtheid en functioneel ontwerp.

Toelichting *stimuleert scheepvaart en vermindert daarmee aantal vrachtwagens op de weg*

Effect: **Positief** ~~Geen~~ ~~Negatief~~

Mogelijkheden om de bestaande infrastructuur zo efficiënt mogelijk te gebruiken worden benut, voorafgaand aan eventuele ruimtelijke ingrepen. Denk hierbij aan openbaar vervoer, mobiliteitsmanagement en benutting (Ladder van Verdaas, 2004).

Toelichting *reeds toegepast (verkeersmanagement)*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

C. Bereikbaarheid functies

De bereikbaarheid en connectiviteit van de belangrijkste functies en voorzieningen worden behouden of vergroot.

Toelichting *Bereikbaarheid Lek/Lekkanaal/ARK vergroot*

Effect: **Positief** ~~Geen~~ ~~Negatief~~

D. Adaptief mobiliteitsbeleid

Het project draagt bij aan een adaptief mobiliteitsbeleid en een flexibel infrastructuurnetwerk dat gewenste ontwikkelingen in de toekomst niet uitsluit.

Toelichting | *geen duidelijk effect*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

10. Investeringen

Een duurzame financiering van een opgave is nodig om ontwikkelingen op de korte maar ook de lange termijn mogelijk te maken. Door na te denken hoe het project voordeel kan bieden voor mogelijke betrokken partijen, kunnen ook de kosten evenredig worden verdeeld (meekoppelkansen). Door in te zetten op de bestaande kwaliteiten van het gebied is de haalbaarheid hiervan het grootste. Financiële baten komen direct of indirect ten gunste van het project en zijn gebruikers.

A. Evenredige kosten en baten

Kansen om projectkosten en resulterende baten te delen met andere mogelijk betrokken partijen worden benut (Meerwaardescan, 2011).

Toelichting | *Aantal win-win's icm de ontwikkeling van het klooster (interviews)*

Effect: **Positief** ~~Geen~~ ~~Negatief~~

B. Gebiedskwaliteiten

Aanwezige kwaliteiten van het gebied worden ingezet ter realisatie van financiële baten. Denk hierbij bijvoorbeeld aan ruimtelijke kwaliteit of vestigingsklimaat.

Toelichting | *geen gebruik van gemaakt*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

C. Aanwending van inkomsten

Waardestijging van grond en vastgoed wordt direct of indirect besteed ten gunste van het project, zijn gebruikers en/of andere betrokkenen.

Toelichting | *niet toegepast*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

11. Vestigingsklimaat voor de bedrijvigheid

Om een economisch vitale en duurzame omgeving te ontwikkelen is het belangrijk een economisch beleid te formuleren dat aansluit bij de sterke en zwakke punten van de regio. Het is hierbij belangrijk het innovatie en –aanpassingsvermogen van de gebiedseconomie te vergroten, zodat kan worden ingesprongen op mogelijke onvoorziene situaties. Een aantrekkelijk vestigingsklimaat is een belangrijk onderdeel van dit beleid.

A. Vestigingsklimaat

De bereikbaarheid, aantrekkelijkheid en de ruimtelijke kwaliteit van het gebied wordt vergroot voor zowel bestaande als mogelijke nieuwe bedrijven.

Toelichting | *Heeft hier geen effect op, eventueel door komst binnenvaarthaven maar dat staat los van dit project*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

De aansluiting van de beroepsbevolking qua grootte, scholing en ervaring op de regionale arbeidsmarkt wordt verbeterd.

Toelichting | *n.v.t.*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

B. Economisch beleid

Er wordt invulling gegeven aan het economisch beleid op het voor het project relevante schaalniveau (nationaal, regionaal, lokaal).

Toelichting | *Volgt economisch beleid (SVIR)*

Effect: **Positief** ~~Geen~~ ~~Negatief~~

C. Innovatie- en aanpassingsvermogen

Er wordt bijgedragen aan het gewenste innovatie- en aanpassingsvermogen van de gebiedseconomie op lange termijn.

Toelichting | *Geen duidelijk effect*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

12. Vestigingsklimaat voor de bevolking

De economisch vitaliteit van de bevolking vormt samen met die van de bedrijvigheid een essentieel onderdeel van een duurzame economie. Het is in dit kader belangrijk dat de werkgelegenheid aansluit bij de beroepsbevolking en hiervoor bereikbaar is. Aan de andere kant dient de beroepsbevolking te blijven ontwikkelen om aan te kunnen sluiten op de werkgelegenheid. Als laatste dient het lokale en regionale voorzieningenaanbod toereikend te zijn voor de wensen van de bevolking voor een aantrekkelijk vestigingsklimaat.

A. Werkgelegenheid

Er wordt een positieve bijdrage geleverd aan de werkgelegenheid op lange termijn, die past bij de ontwikkeling en vaardigheden van de regionale beroepsbevolking.

Toelichting | *Geen duidelijk effect*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

B. Bereikbaarheid arbeidsmarkt

De bereikbaarheid en transparantie van de arbeidsmarkt en hierbij benodigde voorzieningen worden vergroot. Denk hierbij bijvoorbeeld aan informatievoorziening over de arbeidsmarkt, reistijd en -kosten.

Toelichting | *n.v.t.*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

C. Ontwikkeling beroepsbevolking

Er wordt bijgedragen aan de ontwikkeling van de beroepsbevolking voor de lokale en regionale arbeidsmarkt. Denk hierbij aan het realiseren en verbeteren scholing en toegankelijker maken van kennis en ervaring.

Toelichting | *n.v.t.*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

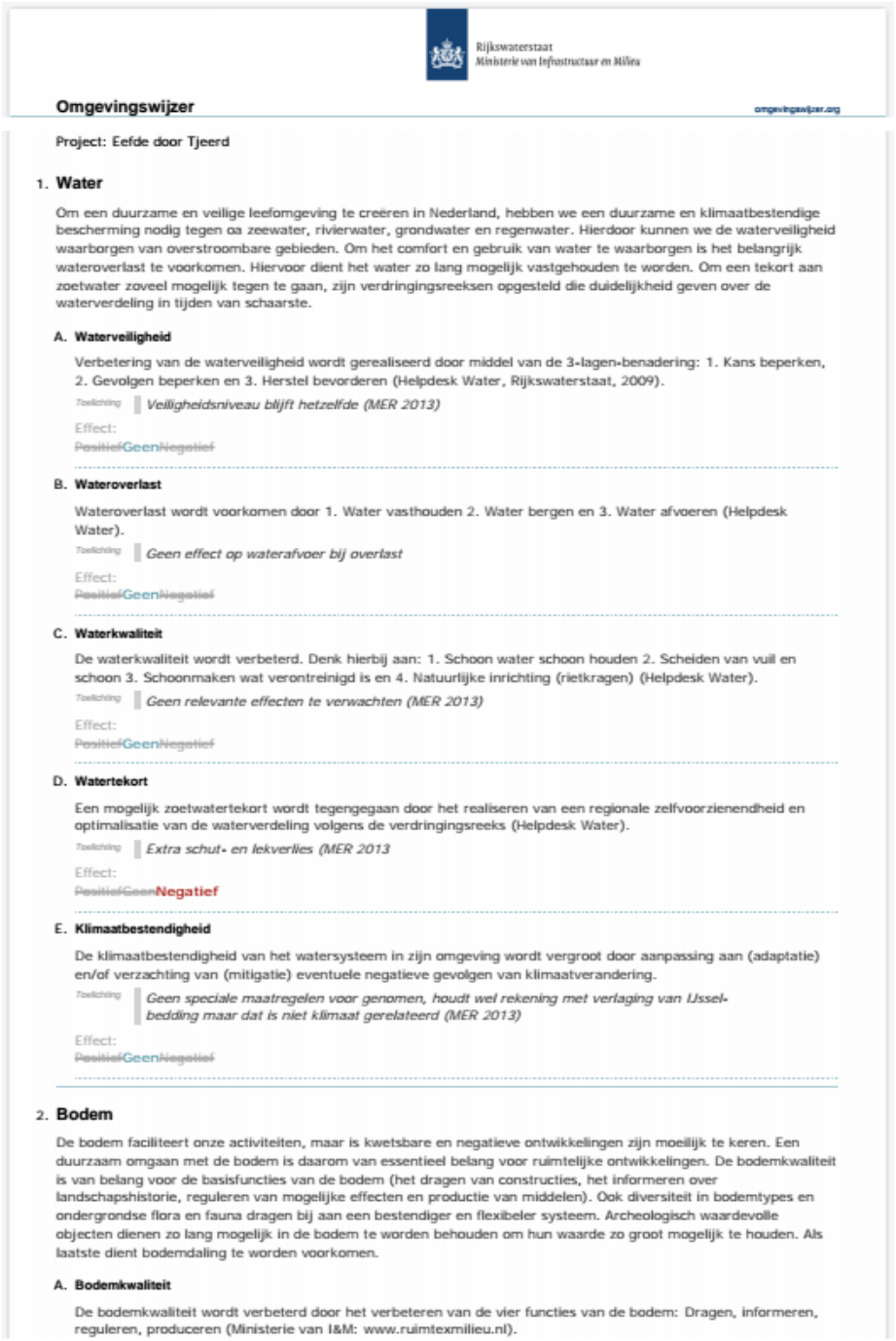
D. Voorzieningenaanbod

Er wordt bijgedragen aan verbetering van het voorzieningenaanbod voor de bevolking. Denk hierbij bijvoorbeeld aan diversiteit, kwaliteit, bereikbaarheid en kosten van voorzieningen.

Toelichting | *Geen duidelijk effect*

Effect: ~~Positief~~ **Geen** ~~Negatief~~

Omgevingswijzer questionare Sluis Eefde



Rijkswaterstaat
Ministerie van Infrastructuur en Milieu

Omgevingswijzer omgevingswijzer.org

Project: Eefde door Tjeerd

1. Water

Om een duurzame en veilige leefomgeving te creëren in Nederland, hebben we een duurzame en klimaatbestendige bescherming nodig tegen oa zeewater, rivierwater, grondwater en regenwater. Hierdoor kunnen we de waterveiligheid waarborgen van overstroombare gebieden. Om het comfort en gebruik van water te waarborgen is het belangrijk wateroverlast te voorkomen. Hiervoor dient het water zo lang mogelijk vastgehouden te worden. Om een tekort aan zoetwater zoveel mogelijk tegen te gaan, zijn verdringingsreeksen opgesteld die duidelijkheid geven over de waterverdeling in tijden van schaarste.

A. Waterveiligheid

Verbetering van de waterveiligheid wordt gerealiseerd door middel van de 3-lagen-benadering: 1. Kans beperken, 2. Gevolgen beperken en 3. Herstel bevorderen (Helpdesk Water, Rijkswaterstaat, 2009).

Toelichting | *Veiligheidsniveau blijft hetzelfde (MER 2013)*

Effect:
~~Positief~~Geen~~Negatief~~

B. Wateroverlast

Wateroverlast wordt voorkomen door 1. Water vasthouden 2. Water bergen en 3. Water afvoeren (Helpdesk Water).

Toelichting | *Geen effect op waterafvoer bij overlast*

Effect:
~~Positief~~Geen~~Negatief~~

C. Waterkwaliteit

De waterkwaliteit wordt verbeterd. Denk hierbij aan: 1. Schoon water schoon houden 2. Scheiden van vuil en schoon 3. Schoonmaken wat verontreinigd is en 4. Natuurlijke inrichting (rietkragen) (Helpdesk Water).

Toelichting | *Geen relevante effecten te verwachten (MER 2013)*

Effect:
~~Positief~~Geen~~Negatief~~

D. Watertekort

Een mogelijk zoetwatertekort wordt tegengegaan door het realiseren van een regionale zelfvoorzienendheid en optimalisatie van de waterverdeling volgens de verdringingsreeks (Helpdesk Water).

Toelichting | *Extra schut- en lekverlies (MER 2013*

Effect:
~~Positief~~~~Geen~~Negatief

E. Klimaatbestendigheid

De klimaatbestendigheid van het watersysteem in zijn omgeving wordt vergroot door aanpassing aan (adaptatie) en/of verzachting van (mitigatie) eventuele negatieve gevolgen van klimaatverandering.

Toelichting | *Geen speciale maatregelen voor genomen, houdt wel rekening met verlaging van IJssel-bedding maar dat is niet klimaat gerelateerd (MER 2013)*

Effect:
~~Positief~~Geen~~Negatief~~

2. Bodem

De bodem faciliteert onze activiteiten, maar is kwetsbare en negatieve ontwikkelingen zijn moeilijk te keren. Een duurzaam omgaan met de bodem is daarom van essentieel belang voor ruimtelijke ontwikkelingen. De bodemkwaliteit is van belang voor de basisfuncties van de bodem (het dragen van constructies, het informeren over landschapshistorie, reguleren van mogelijke effecten en productie van middelen). Ook diversiteit in bodemtypes en ondergrondse flora en fauna dragen bij aan een bestendiger en flexibeler systeem. Archeologisch waardevolle objecten dienen zo lang mogelijk in de bodem te worden behouden om hun waarde zo groot mogelijk te houden. Als laatste dient bodemdaling te worden voorkomen.

A. Bodemkwaliteit

De bodemkwaliteit wordt verbeterd door het verbeteren van de vier functies van de bodem: Dragen, informeren, reguleren, produceren (Ministerie van I&M: www.ruimtexmilieu.nl).

Toelichting *Nvt.*

Effect:
~~Positief~~Geen~~Negatief~~

B. **Bodemdiversiteit**

De diversiteit aan bodemtypes wordt in stand gehouden en zeldzame bodemtypes worden behouden.

Toelichting *Geen effect (MER 2013)*

Effect:
~~Positief~~Geen~~Negatief~~

C. **Bodembiodiversiteit**

De bodembiodiversiteit (de diversiteit van flora en fauna in de bodem) en grootte van ondergrondse populaties wordt vergroot.

Toelichting *Geen effect (MER 2013)*

Effect:
~~Positief~~Geen~~Negatief~~

D. **Archeologische waarden**

De in de bodem aanwezige archeologische waardevolle objecten, structuren en patronen worden in situ bewaard en zo nodig beschermd (Rijksdienst voor het Cultureel erfgoed).

Toelichting *Geen effect (MER 2013)*

Effect:
~~Positief~~Geen~~Negatief~~

E. **Bodemdaling**

Bodemdaling wordt voorkomen ten gunste van bijvoorbeeld de waterveiligheid en behoud van bouwwerken.

Toelichting *Geen effect (MER 2013)*

Effect:
~~Positief~~Geen~~Negatief~~

3. Energie en materialen

Voor een duurzaam en minder afhankelijk energiesysteem is een sluitend systeem van energieproductie en energievraag nodig. De Trias Energetica geeft aan hoe we onze energievraag en -aanbod hierop kunnen aanpassen. Als eerste dienen we daarom: 1) onze energievraag te beperken, 2) zoveel mogelijk duurzaam opgewekte energie te gebruiken en 3) fossiele energiebronnen zo efficient mogelijk te gebruiken. Schaarste van materialen, benarde arbeidsomstandigheden en milieuschade bij materiaalwinning dient te worden voorkomen.Daarnaast kan er synergie worden behaald worden door het uitwisselen van energie en CO_2 tussen verschillende ontwikkelingen. Hiervoor is het belangrijk om vraag en aanbod van energie en CO_2 inzichtelijk te maken, zodat bijvoorbeeld restwarmte kan worden hergebruikt. Als laatste is het belangrijk de robuustheid en flexibiliteit van het energienetwerk te vergroten om kans op falen te verkleinen, en daarmee de functionaliteit van het net te vergroten.

A. **Vermindering energievraag**

Trias Energetica, stap 1: De grootte van de energievraag voor aanleg, gebruik en sloop wordt beperkt. Denk hierbij ook aan grondstof- en materiaalgebruik en het gebruik van passieve energie (DuboCalc, 2012).

Toelichting *Dit hangt grotendeels af van de aanbesteding maar aangezien de ambities op dit vlak zeer duidelijk naar vermindering van de energievraag wijzen is een toekomstige verbetering op dit punt te verwachten. (Ambitiedocument)*

Effect:
Positief~~Geen~~~~Negatief~~

B. **Gebruik duurzame energie**

Trias Energetica, stap 2: Er wordt gebruik gemaakt van duurzaam opgewekte energie, met in acht nemen van de draagkracht van het natuurlijk systeem.

Toelichting *Geen concrete maatregelen meer onderdeel van het project, wellicht nog een verbetering op dit punt als derden dit nog wel gaan realiseren*

Effect:
~~Positief~~Geen~~Negatief~~

C. **Gebruik fossiele brandstoffen**

Trias Energetica, stap 3: Bij toepassen van fossiele energiebronnen worden deze zo efficient mogelijk gebruikt.

Toelichting *Hoewel enigszins buiten de scope van het project, de dieselpompen worden vervangen door elektrische, wat een verbetering is. Echter, door extra schutverlies moet er meer water worden opgepompt wat meer energie kost.*

Effect:
~~Positief~~Geen~~Negatief~~

D. **Gevolgen materiaalwinning**

Materialen, waarvan ernstige negatieve gevolgen bekend zijn bij winning en/of productie worden zoveel mogelijk gemeden. Denk hier bijvoorbeeld aan uitputting, arbeidsomstandigheden, sociale omstandigheden en bodemvervuiling.

Toelichting *Geen duidelijkheid over, hangt grotendeels af van de aanbesteding*

Effect:
~~Positief~~Geen~~Negatief~~

E. **Uitwisseling van energie**

Mogelijkheden voor uitwisseling van energie en CO2 tussen functies tijdens de aanleg, gebruik en sloop worden optimaal benut, waardoor energieoverschotten kunnen worden gebruikt buiten de grenzen van het project (CO2 ladder, 2012).

Toelichting *Hangt grotendeels af van de aanbesteding. Veel grondverzet nodig dus hierdoor veel uitstoot (MER 2013).*

Effect:
~~Positief~~~~Geen~~Negatief

F. **Robuust energiesysteem**

De robuustheid van het energienetwerk wordt vergroot ter verbetering van het functioneren van het net, een grotere flexibiliteit in energielevering en reducering van de faalkans.

Toelichting *Energiebuffer in de vorm van water in het kanaal dat later afgelaten kan worden is een idee, van derden.*

Effect:
~~Positief~~Geen~~Negatief~~

4. Ecologie en biodiversiteit

Een sterk en flexibel ecosysteem is een belangrijk onderdeel van een bestendige en duurzame leefomgeving. Het is daarom van groot belang om flora en fauna de volle mogelijkheid te bieden zich te kunnen ontwikkelen. Samenhang in de leefruimte van planten en dieren is hiervoor een belangrijke voorwaarde. Ook kan het verbinden van zowel blauwe als groene ecologische structuren helpen in het stimuleren van de volledige voedselketen. Door afwisseling in het landschap te creëren, kan ook de diversiteit in bloemen- en diersoorten groeien, wat tot een stabieler ecosysteem leidt.

A. **Leefruimte planten en dieren**

De samenhang in de leefruimtes, broedplaatsen en beschermde gebieden van planten en dieren wordt versterkt en de versnippering van het landschap wordt tegengegaan.

Toelichting *Licht negatieve score, m.n. door de verplaatsing van de roekenkolonie. Wel wordt de compensatie zoveel mogelijk rond de Oude Eefse Beek gerealiseerd (Intentieverklaring)*

Effect:
~~Positief~~~~Geen~~Negatief

B. **Biodiversiteit**

De biodiversiteit van flora en fauna wordt vergroot door een heterogene opbouw van het landschap.

Toelichting *Geen effect (MER 2013)*

Effect:
~~Positief~~Geen~~Negatief~~

C. **Ecologische structuren**

Groene ecologische structuren (land) worden versterkt voor flora en fauna om de volledige voedselketen te blijven faciliteren (van plankton tot aaseters).

Toelichting *Geen speciale maatregelen voor getroffen*

Effect:
~~Positief~~Geen~~Negatief~~

Blauwe ecologische structuren (water) worden versterkt voor flora en fauna om de volledige voedselketen te blijven faciliteren.

Toelichting *Geen speciale maatregelen voor getroffen. Vistrap via de Berkel is wel eens aangedragen maar vormt geen onderdeel van het project*

Effect:
~~Positief~~Geen~~Negatief~~

5. Ruimtegebruik

Omdat ruimte schaars is in Nederland, is het belangrijk dat we beschikbare ruimte zo efficiënt en multifunctioneel mogelijk inrichten. Uitbreiding van bebouwd gebied dient dan ook enkel te worden toegelaten als dat nodig is. Deze duurzame en strategische ontwikkeling van beschikbare ruimte is nodig om leefbare gebieden te ontwikkelen die antwoord geven op huidige en toekomstige gebruikswensen. Bijkomende voordelen hiervan zijn dat dit ook de vraag naar mobiliteit en energiegebruik verkleint en mogelijkheden biedt voor vergroting van de ruimtelijke en ecologische kwaliteiten.De ladder voor Duurzame Verstedelijking (afkomstig uit de SVIR, 2011) biedt een methode dit in drie te stappen te onderzoeken. Als eerste dient te worden onderzocht of de voorgestelde ontwikkelingen voorzien in een regionale bebouwingsvraag, zowel kwantitatief als kwalitatief. Als die vraag aanwezig is, moet worden onderzocht of deze vraag kan worden opgevangen in bestaand stedelijk gebied. Programma dat niet kan worden opgevangen in bestaand gebied dient hierna te worden gepland in uitleggebieden die multimodaal ontsloten zijn.

A. Aansluiting bebouwingsvraag

Het project beantwoordt de regionale vraag naar programma en ruimte, rekening houdend met omringende initiatieven en huisvestingsontwikkelingen (Ladder duurzame verstedelijking, SVIR, 2012).

Toelichting

> *Er is deels gehoor gegeven aan de wensen vanuit de omgeving, m.n. gericht op recreatie om de sluis, het faciliteren van mogelijke energieopwekking en het versterken van de Eefse Beek door natuurcompensatie daar te realiseren.*

Effect:

Positief ~~Geen~~ ~~Negatief~~

B. Gebruik bestaand gebied

Mogelijkheden voor realisatie van de beoogde ontwikkelingen binnen bestaand stedelijk gebied worden optimaal benut dmv bijvoorbeeld opvulling, herbestemming of herstructureren (Ladder duurzame verstedelijking, SVIR, 2012).

Toelichting

> *Locatie Midden Noord kan volledig op het bestaande complex worden gerealiseerd.Nu moeten o.a. 3 huizen worden gesloopt (MER 2013)*

Effect:

~~Positief~~ ~~Geen~~ **Negatief**

C. Uitbreiding

Bij uitbreiding buiten bestaand stedelijke gebied, worden mogelijkheden tot multimodale ontsluiting van de nieuwe locatie benut (Ladder duurzame verstedelijking, SVIR, 2012).

Toelichting

> *Multimodale ontsluiting is niet van toepassing*

Effect:

~~Positief~~ **Geen** ~~Negatief~~

D. Meervoudig ruimtegebruik

Mogelijkheden om bestaande of geplande ruimte meervoudig te gebruiken worden optimaal benut.

Toelichting

> *Hier lagen mogelijkheden maar behalve recreatie toestaan vind er eigenlijk geen meervoudig ruimtegebruik plaats. Initiaven zoals horecagelegenheden op het complex zijn helaas afgevallen.*

Effect:

~~Positief~~ **Geen** ~~Negatief~~

6. Ruimtelijke kwaliteit

In samenhang met ons ruimtegebruik, draagt een vergroting van de kwaliteit van ruimte bij aan een duurzame ruimteontwikkeling. Ook bijvoorbeeld de connectiviteit van gebieden, economische kansen en sociale veiligheid kunnen hierdoor vergroot worden. De kwaliteit wordt bepaald door de mate waarin ruimte onze activiteiten ondersteunen en flexibiliteit bieden om in de toekomst aan te kunnen blijven sluiten op veranderende eisen. Volgens Vitruvius bestaat ruimtelijke kwaliteit uit drie onderdelen: 1) Belevingswaarde (waardering, sfeer, identiteit en samenhang), 2) Gebruikswaarde (kwaliteit functies, variatie in grootte en type functies) en 3) Toekomstwaarde (flexibiliteit, anticipatie op toekomstige veranderingen).

A. Belevingswaarde

De belevingswaarde van het gebied, of de mate waarin gebruikers het gebied als positief ervaren, wordt versterkt. Denk hierbij aan bouwkundige elementen met cultuurhistorische waarde, sfeer, aanwezige landschapsstructuren, natuur en ruimtelijke samenhang.

Toelichting

> *Ja, puur door de komst van een extra sluis wordt de beleving vergroot. De rest wordt zo veel mogelijk hetzelfe gelaten. Wel wordt er een uitkijkplatform gerealiseerd.*

Effect:

Positief ~~Geen~~ ~~Negatief~~

B. Gebruikswaarde

De gebruikswaarde van het gebied wordt versterkt. Denk hierbij aan vergroting van de kwaliteit van functies en de variatie in grootte en type functies.

Toelichting *Niet meer dan de bestaande situatie. Lagen hier wel ambities om o.a. de monumentale kwaliteit te verbeteren maar dit heeft weinig tot concrete maatregelen geleid. Er lagen hier dus duidelijk mogelijkheden om meer gebruikerswaarde te creëren.*

Effect:
~~Positief~~Geen~~Negatief~~

C. **Toekomstwaarde**

De toekomstwaarde van het gebied wordt vergroot. Denk hierbij aan flexibiliteit in het plan, een strategische aansluiting op zijn omgeving en anticipatie op toekomstige veranderingen.

Effect:
~~Positief~~Geen~~Negatief~~

D. **Integraal ontwerp**

Bestaande en geplande functies en omringende openbare ruimte zijn in samenhang met elkaar en versterken elkaar door een ruimtelijk integraal ontwerp (Kader Ruimtelijke Kwaliteit en Vormgeving, 2012, Rijkswaterstaat).

Toelichting *Uitgebreid over nagedacht, met name vertaald in het ambitiedocument. Helaas hier geen betrokkenheid van de omgeving.*

Effect:
Positief~~Geen~~~~Negatief~~

7. Sociale relevantie

Voor een duurzame ontwikkeling van ruimte, is het belangrijk dat de ontwikkeling een positief effect heeft op het sociaal welzijn van zijn gebruikers en omwonenden. Hierbij dienen oplossingen te worden geboden voorzowel bestaande als toekomstige gebruikers, met in achtneming van de ruimtelijke gevolgen van demografische trends.Door aansluiting van de ontwikkeling bij zijn gebruikers ontstaat sociaal draagvlak (goedkeuring) en bewustwording voor de ontwikkeling, wat de haalbaarheid helpt vergroten. Het actief inzetten van lokale expertise kan hierbij helpen om lokale behoeftes van de gemeenschap te identificeren.

A. **Sociaal welzijn**

Het project draagt bij aan het sociaal welzijn van zijn gebruikers, omwonenden en andere betrokken partijen en individuen. Denk hierbij bijvoorbeeld aan de harmonie onder de bevolking en het vermijden van sociale barrièrewerking.

Toelichting *Geen duidelijk effect.*

Effect:
~~Positief~~Geen~~Negatief~~

B. **Demografische samenstelling**

Er worden oplossingen geboden voor de ruimtelijke gevolgen en eisen van de huidige aanwezige demografische groepen. Denk hierbij aan programmakeuze en vormgeving van de openbare ruimte.

Toelichting *Geen duidelijk effect.*

Effect:
~~Positief~~Geen~~Negatief~~

Er worden oplossingen geboden voor de ruimtelijke gevolgen en eisen van relevante demografische ontwikkelingen (zoals vergrijzing of krimp). Denk hierbij bijvoorbeeld aan flexibiliteit en aanpasbaarheid van programma.

Toelichting *Eefde heeft last van een dalend voorzieningenniveau, o.a. Highport probeert hier iets aan te doen. Er lagen op dit vlak duidelijk kansen voor het project (zoals jachthaven) maar die zijn niet benut.*

Effect:
~~Positief~~Geen~~Negatief~~

C. **Sociaal draagvlak**

Er is sociaal draagvlak aanwezig voor het project onder toekomstige gebruikers, omwoners en andere betrokken partijen en individuen.

Toelichting *Draagvlak is aanwezig, maar, dit had groter kunnen zijn en vandaar geen positief effect. Bewoners van het kanaalpad zijn overigens fel tegen het project.*

Effect:
~~Positief~~Geen~~Negatief~~

D. **Lokale expertise**

Lokale expertise en specifieke kennis wordt verzameld en toegepast, om relevante behoeftes van de gemeenschap te identificeren en potentiele conflicten voor te zijn.

Toelichting *Er is een duidelijk beeld van lokale behoeftes en het beeld van de sluis ('ansicht'), wat ook een rol speelt binnen het project.*

Effect:
Positief~~Geen~~~~negatief~~

8. **Welzijn**

Door ruimte zo in te richten dat een positieve bijdrage geleverd kan worden aan het welzijn en de gezondheid van bewoners, gebruikers en bezoekers, ontwikkelen we een duurzame en veilige leefomgeving. Met functies die onze gezondheid bevorderen en uitnodigen tot een gezonde levensstijl dragen we hier aan bij. Ook is het belangrijk onze veiligheid, zowel fysiek als sociaal, te waarborgen. Hinder en overige overlast dienen te worden voorkomen om een aantrekkelijk en leefbaar gebied te creëren.

A. **Gezondheid**

De te realiseren functies hebben een positieve bijdrage aan de gezondheid van de bewoners en bezoekers en nodigen uit tot een gezonde levensstijl.

Toelichting *Geen effect*

Effect:
~~Positief~~Geen~~Negatief~~

Mogelijkheden om gezondheidsrisico's te minimaliseren of verwijderen worden benut. Denk hierbij bijvoorbeeld aan geluidshinder en luchtkwaliteit.

Toelichting *Nvt.*

Effect:
~~Positief~~Geen~~Negatief~~

B. **Veiligheid**

De fysieke veiligheid (lichaam) van de gebruikers en omwonenden van het gebied blijft tijdens de bouw, gebruik en sloop gewaarborgd. Denk hierbij aan bijvoorbeeld verkeersveiligheid.

Toelichting *Hangt deels af van de aanbesteding maar de bedoeling is dat de weg over de sluis (Kaperallee) veiliger wordt, m.n. voor fietsers. Daarnaast verbeterd de veiligheid door minder wachtende schepen voor de sluis.*

Effect:
Positief~~Geen~~~~negatief~~

De sociale veiligheid (geest) van de gebruikers en omwonenden van het gebied blijft tijdens de bouw, gebruik en sloop gewaarborgd. Denk hierbij bijvoorbeeld aan vermijden van gevoelens van dreiging, agressie of geweld.

Toelichting *Geen effect.*

Effect:
~~Positief~~Geen~~Negatief~~

C. **Hinder**

Hinder door externe invloeden wordt voorkomen. Denk hierbij bijvoorbeeld aan trillingshinder, uitstoot van schadelijke stoffen, lichtvervuiling of zichthinder.

Toelichting *Hangt van aanbesteding af.*

Effect:
~~Positief~~Geen~~Negatief~~

9. **Bereikbaarheid**

Door de bereikbaarheid van gebieden hoog te houden en gebruikswaarde van infrastructuursystemen te vergroten, kan de toekomstwaarde van een gebied worden vergroot. Bereikbaarheid heeft ook een sterke relatie met thema's als energie, ruimtegebruik, welzijn en economische thema's. Voor een duurzaam bereikbaar gebied is het belangrijk dat een robuust verkeerssysteem wordt ontwikkeld van verschillende vervoersmodaliteiten en knooppunten daartussen. Een efficient gebruik van bestaand en nieuwe infrastructuur kan helpen dit te bereiken en te besparen om ruimte, brandstof en tijd. Door een adaptief mobiliteitsbeleid en –netwerk kunnen we blijven inspringen op gewenste en ongewenste ontwikkelingen.

A. **Robuust transportsysteem**

)

De mobiliteitsmogelijkheden binnen verschillende verkeersmodaliteiten en overstapmogelijkheden hiertussen worden vergroot (Visie op Knooppunten, 2000).

Toelichting | *bevordert scheepvaart in de regio en hiermee ook multimodaal vervoer*

Effect:
Positief ~~Geen~~ ~~Negatief~~

De betrouwbaarheid van de reismogelijkheden en de voorspelbaarheid van de reistijd wordt vergroot. Denk hierbij aan de reis van deur tot deur (SVIR, Bereikbaarheidsindicatoren).

Toelichting | *Van 1 naar 2 kolken*

Effect:
Positief ~~Geen~~ ~~Negatief~~

B. Efficiënt gebruik infrastructuur

De positionering van programma en functies draagt bij aan de verkleining van de mobiliteitsvraag. Denk hierbij bijvoorbeeld aan dichtheid en functioneel ontwerp.

Toelichting | *Vermindert aantal vrachtwagens op de weg*

Effect:
Positief ~~Geen~~ ~~Negatief~~

Mogelijkheden om de bestaande infrastructuur zo efficient mogelijk te gebruiken worden benut, voorafgaand aan eventuele ruimtelijke ingrepen. Denk hierbij aan openbaar vervoer, mobiliteitsmanagement en benutting (Ladder van Verdaas, 2004).

Toelichting | *Is al reeds toegepast*

Effect:
~~Positief~~ **Geen** ~~Negatief~~

C. Bereikbaarheid functies

De bereikbaarheid en connectiviteit van de belangrijkste functies en voorzieningen worden behouden of vergroot.

Toelichting | *Bereikbaarheid van Twentekanaal en aanliggende havens wordt vergroot*

Effect:
Positief ~~Geen~~ ~~Negatief~~

D. Adaptief mobiliteitsbeleid

Het project draagt bij aan een adaptief mobiliteitsbeleid en een flexibel infrastructuurnetwerk dat gewenste ontwikkelingen in de toekomst niet uitsluit.

Toelichting | *Geen duidelijk effect.*

Effect:
~~Positief~~ **Geen** ~~Negatief~~

10. Investeringen

Een duurzame financiering van een opgave is nodig om ontwikkelingen op de korte maar ook de lange termijn mogelijk te maken. Door na te denken hoe het project voordeel kan bieden voor mogelijke betrokken partijen, kunnen ook de kosten evenredig worden verdeeld (meekoppelkansen). Door in te zetten op de bestaande kwaliteiten van het gebied is de haalbaarheid hiervan het grootste. Financiele baten komen direct of indirect ten gunste van het project en zijn gebruikers.

A. Evenredige kosten en baten

Kansen om projectkosten en resulterende baten te delen met andere mogelijk betrokken partijen worden benut (Meerwaardescan, 2011).

Toelichting | *Lagen hier wel kansen, maar vervoerders betalen bijvoorbeeld niet mee en het project wordt niet gecombineerd met de verruiming.*

Effect:
~~Positief~~ **Geen** ~~Negatief~~

B. Gebiedskwaliteiten

Aanwezige kwaliteiten van het gebied worden ingezet ter realisatie van financiele baten. Denk hierbij bijvoorbeeld aan ruimtelijke kwaliteit of vestigingsklimaat.

Toelichting | *Geen duidelijke link hiermee. Recreatieve attractiviteit wordt wel enigszins vergroot maar zal hooguit voor de lokale middenstand iets opleveren. Energie opwekking of horeca op de sluis had dit wel kunnen bereiken.*

Effect:
~~Positief~~ **Geen** ~~Negatief~~

C. Aanwending van inkomsten

Waardestijging van grond en vastgoed wordt direct of indirect besteed ten gunste van het project, zijn gebruikers en/of andere betrokkenen.

Toelichting | *Wordt niet gedaan*

Effect:
~~Positief~~Geen~~Negatief~~

11. Vestigingsklimaat voor de bedrijvigheid

Om een economisch vitale en duurzame omgeving te ontwikkelen is het belangrijk een economisch beleid te formuleren dat aansluit bij de sterke en zwakke punten van de regio. Het is hierbij belangrijk het innovatie en –aanpassingsvermogen van de gebiedseconomie te vergroten, zodat kan worden ingesprongen op mogelijke onvoorziene situaties. Een aantrekkelijk vestigingsklimaat is een belangrijk onderdeel van dit beleid.

A. Vestigingsklimaat

De bereikbaarheid, aantrekkelijkheid en de ruimtelijke kwaliteit van het gebied wordt vergroot voor zowel bestaande als mogelijke nieuwe bedrijven.

Toelichting | *Geldt met name voor de achterliggende havens, gebied rond de sluis profiteert maar minimaal*

Effect:
Positief~~Geen~~~~Negatief~~

De aansluiting van de beroepsbevolking qua grootte, scholing en ervaring op de regionale arbeidsmarkt wordt verbeterd.

Toelichting | *Nvt.*

Effect:
~~Positief~~Geen~~Negatief~~

B. Economisch beleid

Er wordt invulling gegeven aan het economisch beleid op het voor het project relevante schaalniveau (nationaal, regionaal, lokaal).

Toelichting | *Volgt beleid, waarin de opwaardering van het Twentekanaal staat*

Effect:
Positief~~Geen~~~~Negatief~~

C. Innovatie- en aanpassingsvermogen

Er wordt bijgedragen aan het gewenste innovatie- en aanpassingsvermogen van de gebiedseconomie op lange termijn.

Toelichting | *Geen duidelijke relatie*

Effect:
~~Positief~~Geen~~Negatief~~

12. Vestigingsklimaat voor de bevolking

De economisch vitaliteit van de bevolking vormt samen met die van de bedrijvigheid een essentieel onderdeel van een duurzame economie. Het is in dit kader belangrijk dat de werkgelegenheid aansluit bij de beroepsbevolking en hiervoor bereikbaar is. Aan de andere kant dient de beroepsbevolking te blijven ontwikkelen om aan te kunnen sluiten op de werkgelegenheid. Als laatste dient het lokale en regionale voorzieningenaanbod toereikend te zijn voor de wensen van de bevolking voor een aantrekkelijk vestigingsklimaat.

A. Werkgelegenheid

Er wordt een positieve bijdrage geleverd aan de werkgelegenheid op lange termijn, die past bij de ontwikkeling en vaardigheden van de regionale beroepsbevolking.

Toelichting | *Geen duidelijk effect, zeker op de langer termijn niet*

Effect:
~~Positief~~Geen~~Negatief~~

B. Bereikbaarheid arbeidsmarkt

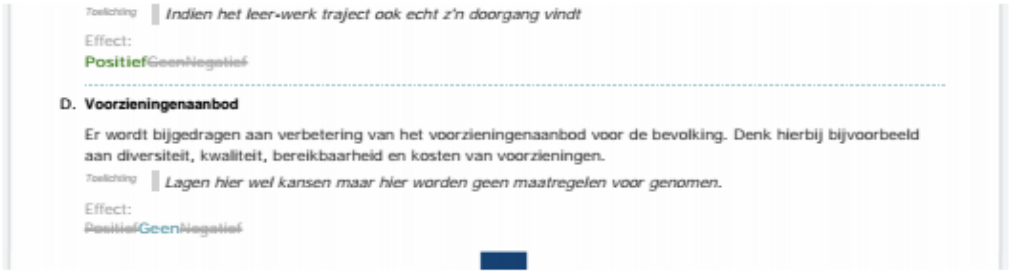
De bereikbaarheid en transparantie van de arbeidsmarkt en hierbij benodigde voorzieningen worden vergroot. Denk hierbij bijvoorbeeld aan informatievoorziening over de arbeidsmarkt, reistijd en -kosten.

Toelichting | *Geen effect*

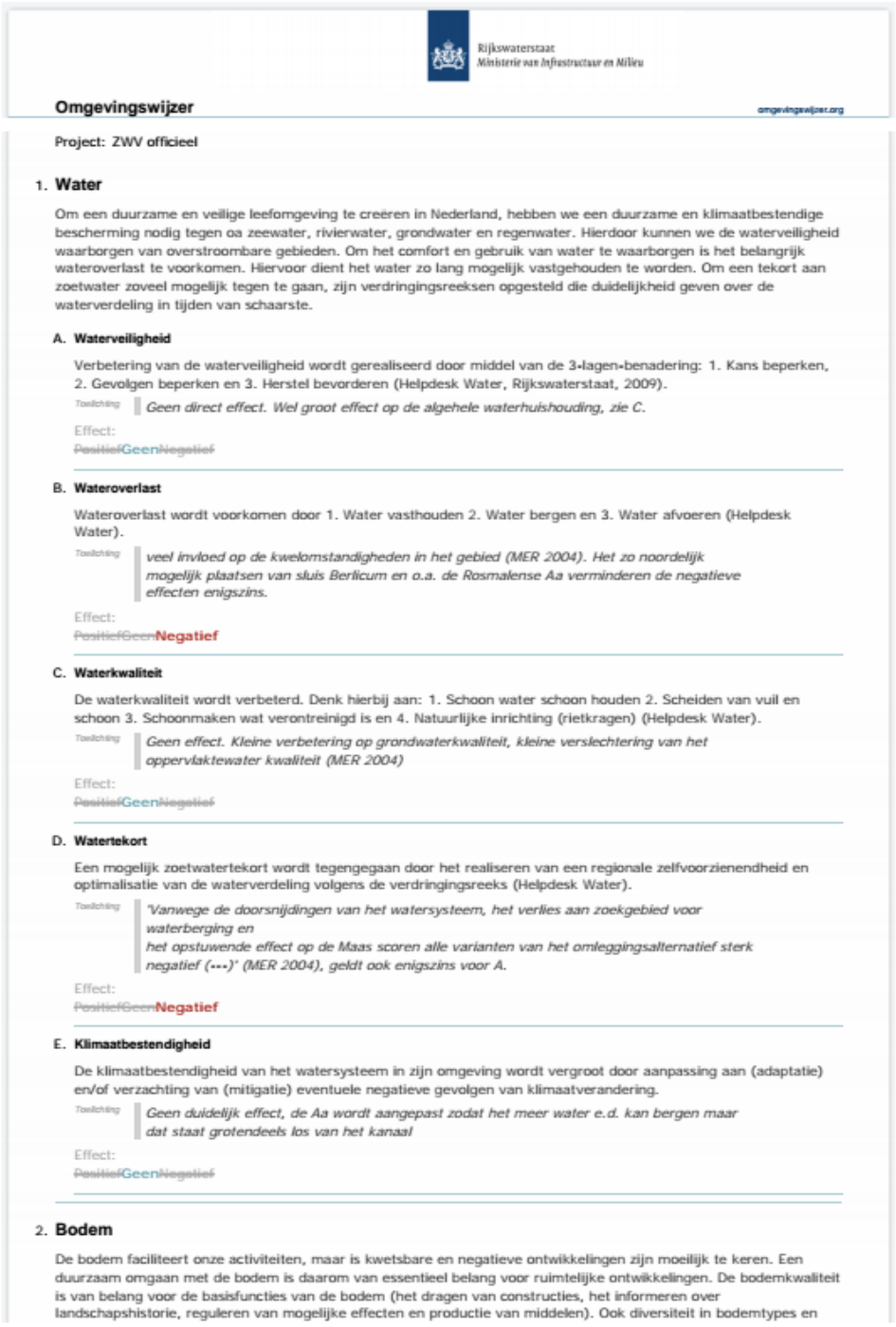
Effect:
~~Positief~~Geen~~Negatief~~

C. Ontwikkeling beroepsbevolking

Er wordt bijgedragen aan de ontwikkeling van de beroepsbevolking voor de lokale en regionale arbeidsmarkt. Denk hierbij aan het realiseren en verbeteren scholing en toegankelijker maken van kennis en ervaring.


Toelichting
Indien het leer-werk traject ook echt z'n doorgang vindt
Effect:
PositiefGeennegatief
D. Voorzieningenaanbod
Er wordt bijgedragen aan verbetering van het voorzieningenaanbod voor de bevolking. Denk hierbij bijvoorbeeld aan diversiteit, kwaliteit, bereikbaarheid en kosten van voorzieningen.
Toelichting
Lagen hier wel kansen maar hier worden geen maatregelen voor genomen.
Effect:
PositiefGeennegatief

Omgevingswijzer questionare Zuid-Willemsvaart



Rijkswaterstaat
Ministerie van Infrastructuur en Milieu

Omgevingswijzer omgevingswijzer.org

Project: ZWV officieel

1. Water

Om een duurzame en veilige leefomgeving te creëren in Nederland, hebben we een duurzame en klimaatbestendige bescherming nodig tegen oa zeewater, rivierwater, grondwater en regenwater. Hierdoor kunnen we de waterveiligheid waarborgen van overstroombare gebieden. Om het comfort en gebruik van water te waarborgen is het belangrijk wateroverlast te voorkomen. Hiervoor dient het water zo lang mogelijk vastgehouden te worden. Om een tekort aan zoetwater zoveel mogelijk tegen te gaan, zijn verdringingsreeksen opgesteld die duidelijkheid geven over de waterverdeling in tijden van schaarste.

A. Waterveiligheid

Verbetering van de waterveiligheid wordt gerealiseerd door middel van de 3-lagen-benadering: 1. Kans beperken, 2. Gevolgen beperken en 3. Herstel bevorderen (Helpdesk Water, Rijkswaterstaat, 2009).

Toelichting *Geen direct effect. Wel groot effect op de algehele waterhuishouding, zie C.*

Effect:
~~Positief~~Geen~~Negatief~~

B. Wateroverlast

Wateroverlast wordt voorkomen door 1. Water vasthouden 2. Water bergen en 3. Water afvoeren (Helpdesk Water).

Toelichting *veel invloed op de kwelomstandigheden in het gebied (MER 2004). Het zo noordelijk mogelijk plaatsen van sluis Berlicum en o.a. de Rosmalense Aa verminderen de negatieve effecten enigszins.*

Effect:
~~Positief~~~~Geen~~**Negatief**

C. Waterkwaliteit

De waterkwaliteit wordt verbeterd. Denk hierbij aan: 1. Schoon water schoon houden 2. Scheiden van vuil en schoon 3. Schoonmaken wat verontreinigd is en 4. Natuurlijke inrichting (rietkragen) (Helpdesk Water).

Toelichting *Geen effect. Kleine verbetering op grondwaterkwaliteit, kleine verslechtering van het oppervlaktewater kwaliteit (MER 2004)*

Effect:
~~Positief~~Geen~~Negatief~~

D. Watertekort

Een mogelijk zoetwatertekort wordt tegengegaan door het realiseren van een regionale zelfvoorzienendheid en optimalisatie van de waterverdeling volgens de verdringingsreeks (Helpdesk Water).

Toelichting *"Vanwege de doorsnijdingen van het watersysteem, het verlies aan zoekgebied voor waterberging en het opstuwende effect op de Maas scoren alle varianten van het omleggingsalternatief sterk negatief (---)" (MER 2004), geldt ook enigszins voor A.*

Effect:
~~Positief~~~~Geen~~**Negatief**

E. Klimaatbestendigheid

De klimaatbestendigheid van het watersysteem in zijn omgeving wordt vergroot door aanpassing aan (adaptatie) en/of verzachting van (mitigatie) eventuele negatieve gevolgen van klimaatverandering.

Toelichting *Geen duidelijk effect, de Aa wordt aangepast zodat het meer water e.d. kan bergen maar dat staat grotendeels los van het kanaal*

Effect:
~~Positief~~Geen~~Negatief~~

2. Bodem

De bodem faciliteert onze activiteiten, maar is kwetsbare en negatieve ontwikkelingen zijn moeilijk te keren. Een duurzaam omgaan met de bodem is daarom van essentieel belang voor ruimtelijke ontwikkelingen. De bodemkwaliteit is van belang voor de basisfuncties van de bodem (het dragen van constructies, het informeren over landschapshistorie, reguleren van mogelijke effecten en productie van middelen). Ook diversiteit in bodemtypes en

ondergrondse flora en fauna dragen bij aan een bestendiger en flexibeler systeem. Archeologisch waardevolle objecten dienen zo lang mogelijk in de bodem te worden behouden om hun waarde zo groot mogelijk te houden. Als laatste dient bodemdaling te worden voorkomen.

A. Bodemkwaliteit

De bodemkwaliteit wordt verbeterd door het verbeteren van de vier functies van de bodem: Dragen, informeren, reguleren, produceren (Ministerie van I&M: www.ruimtexmilieu.nl).

Toelichting | *Hier lag een grote kans door de verontreiniging in de Koornwaard mee te nemen, deze is nu alleen afgedekt en geisoleerd.*

Effect:
~~Positief~~Geen~~Negatief~~

B. Bodemdiversiteit

De diversiteit aan bodemtypes wordt in stand gehouden en zeldzame bodemtypes worden behouden.

Toelichting | *Slechts enkele relatief gave bodemprofielen worden doorsneden*

Effect:
~~Positief~~Geen~~Negatief~~

C. Bodembiodiversiteit

De bodembiodiversiteit (de diversiteit van flora en fauna in de bodem) en grootte van ondergrondse populaties wordt vergroot.

Toelichting | *Geen duidelijk effect*

Effect:
~~Positief~~Geen~~Negatief~~

D. Archeologische waarden

De in de bodem aanwezige archeologische waardevolle objecten, structuren en patronen worden in situ bewaard en zo nodig beschermd (Rijksdienst voor het Cultureel erfgoed).

Toelichting | *Tracé doorsnijdt gebieden met hoge indicatieve waarden en een terp wordt deels afgegraven (MER 2004)*

Effect:
~~Positief~~~~Geen~~**Negatief**

E. Bodemdaling

Bodemdaling wordt voorkomen ten gunste van bijvoorbeeld de waterveiligheid en behoud van bouwwerken.

Toelichting | *Basisvariant zou grote gevolgend hebben maar de regiovariant beperkt dit sterk (MER 2004)*

Effect:
~~Positief~~Geen~~Negatief~~

3. Energie en materialen

Voor een duurzaam en minder afhankelijk energiesysteem is een sluitend systeem van energieproductie en energievraag nodig. De Trias Energetica geeft aan hoe we onze energievraag en -aanbod hierop kunnen aanpassen. Als eerste dienen we daarom: 1) onze energievraag te beperken, 2) zoveel mogelijk duurzaam opgewekte energie te gebruiken en 3) fossiele energiebronnen zo efficiënt mogelijk te gebruiken. Schaarste van materialen, benarde arbeidsomstandigheden en milieuschade bij materiaalwinning dient te worden voorkomen.Daarnaast kan er synergie worden behaald worden door het uitwisselen van energie en CO2 tussen verschillende ontwikkelingen. Hiervoor is het belangrijk om vraag en aanbod van energie en CO2 inzichtelijk te maken, zodat bijvoorbeeld restwarmte kan worden hergebruikt. Als laatste is het belangrijk de robuustheid en flexibiliteit van het energienetwerk te vergroten om kans op falen te verkleinen, en daarmee de functionaliteit van het net te vergroten.

A. Vermindering energievraag

Trias Energetica, stap 1: De grootte van de energievraag voor aanleg, gebruik en sloop wordt beperkt. Denk hierbij ook aan grondstof- en materiaalgebruik en het gebruik van passieve energie (DuboCalc, 2012).

Toelichting | *Zover duidelijk worden er speciale maatregelen getrofffen.*

Effect:
~~Positief~~Geen~~Negatief~~

B. Gebruik duurzame energie

Trias Energetica, stap 2: Er wordt gebruik gemaakt van duurzaam opgewekte energie, met in acht nemen van de draagkracht van het natuurlijk systeem.

Toelichting | *Wordt niet toegepast*

Effect:
~~Positief~~Geen~~Negatief~~

C. Gebruik fossiele brandstoffen

Trias Energetica, stap 3: Bij toepassen van fossiele energiebronnen worden deze zo efficient mogelijk gebruikt.

Toelichting *Geen maatregelen voor bekend.*

Effect:
~~Positief~~Geen~~Negatief~~

D. Gevolgen materiaalwinning

Materialen, waarvan ernstige negatieve gevolgen bekend zijn bij winning en/of productie worden zoveel mogelijk gemeden. Denk hier bijvoorbeeld aan uitputting, arbeidsomstandigheden, sociale omstandigheden en bodemvervuiling.

Toelichting *Geen maatregelen voor bekend.*

Effect:
~~Positief~~Geen~~Negatief~~

E. Uitwisseling van energie

Mogelijkheden voor uitwisseling van energie en CO2 tussen functies tijdens de aanleg, gebruik en sloop worden optimaal benut, waardoor energieoverschotten kunnen worden gebruikt buiten de grenzen van het project (CO2 ladder, 2012).

Toelichting *Veel grondverzet wat resulteerd in hoge emissies*

Effect:
~~Positief~~~~Geen~~**Negatief**

F. Robuust energiesysteem

De robuustheid van het energienetwerk wordt vergroot ter verbetering van het functioneren van het net, een grotere flexibiliteit in energielevering en reducering van de faalkans.

Toelichting *Geen maatregelen voor bekend.*

Effect:
~~Positief~~Geen~~Negatief~~

4. Ecologie en biodiversiteit

Een sterk en flexibel ecosysteem is een belangrijk onderdeel van een bestendige en duurzame leefomgeving. Het is daarom van groot belang om flora en fauna de volle mogelijkheid te bieden zich te kunnen ontwikkelen. Samenhang in de leefruimte van planten en dieren is hiervoor een belangrijke voorwaarde. Ook kan het verbinden van zowel blauwe als groene ecologische structuren helpen in het stimuleren van de volledige voedselketen. Door afwisseling in het landschap te creëren, kan ook de diversiteit in bloemen- en diersoorten groeien, wat tot een stabieler ecosysteem leidt.

A. Leefruimte planten en dieren

De samenhang in de leefruimtes, broedplaatsen en beschermde gebieden van planten en dieren wordt versterkt en de versnippering van het landschap wordt tegengegaan.

Toelichting *Het project tast een aantal gebieden aan met grote natuurlijke waarden, hier worden echter wel compenserend maatregelen voor getroffen. Grote plus is het realiseren van een ecologische verbindingszone.*

Effect:
Positief~~Geen~~**Negatief**

B. Biodiversiteit

De biodiversiteit van flora en fauna wordt vergroot door een heterogene opbouw van het landschap.

Toelichting *Aan de ene kant worden een aantal soorten negatief beinvloedt door het project, aan de andere kant creert het project ook weer leefgebied voor andere soorten, zoals door ecologische oevers aan te leggen.*

Effect:
Positief~~Geen~~**Negatief**

C. Ecologische structuren

Groene ecologische structuren (land) worden versterkt voor flora en fauna om de volledige voedselketen te blijven faciliteren (van plankton tot aaseters).

Toelichting *Geen duidelijk effect. Wordt wel rekening gehouden met vliegroutes van vleermuizen en de potentiele verbinding met andere dassenpopulaties.*

Effect:
~~Positief~~Geen~~Negatief~~

Blauwe ecologische structuren (water) worden versterkt voor flora en fauna om de volledige voedselketen te blijven faciliteren.

Toelichting *Silfons maken visoptrek moeilijk, natte oevers en de rosmalense Aa hebben dan wel weer een positief effect.*

Effect:
PositiefGeenNegatief

---

5. Ruimtegebruik

Omdat ruimte schaars is in Nederland, is het belangrijk dat we beschikbare ruimte zo efficiënt en multifunctioneel mogelijk inrichten. Uitbreiding van bebouwd gebied dient dan ook enkel te worden toegelaten als dat nodig is. Deze duurzame en strategische ontwikkeling van beschikbare ruimte is nodig om leefbare gebieden te ontwikkelen die antwoord geven op huidige en toekomstige gebruikswensen. Bijkomende voordelen hiervan zijn dat dit ook de vraag naar mobiliteit en energiegebruik verkleint en mogelijkheden biedt voor vergroting van de ruimtelijke en ecologische kwaliteiten.De ladder voor Duurzame Verstedelijking (afkomstig uit de SVIR, 2011) biedt een methode dit in drie te stappen te onderzoeken. Als eerste dient te worden onderzocht of de voorgestelde ontwikkelingen voorzien in een regionale bebouwingsvraag, zowel kwantitatief als kwalitatief. Als die vraag aanwezig is, moet worden onderzocht of deze vraag kan worden opgevangen in bestaand stedelijk gebied. Programma dat niet kan worden opgevangen in bestaand gebied dient hierna te worden gepland in uitleggebieden die multimodaal ontsloten zijn.

A. Aansluiting bebouwingsvraag

Het project beantwoordt de regionale vraag naar programma en ruimte, rekening houdend met omringende initiatieven en huisvestingsontwikkelingen (Ladder duurzame verstedelijking, SVIR, 2012).

Toelichting *Houdt rekening met andere ruimtelijke ontwikkelingen maar geen duidelijke aansluiting op bebouwingsvraag.*

Effect:
PositiefGeenNegatief

B. Gebruik bestaand gebied

Mogelijkheden voor realisatie van de beoogde ontwikkelingen binnen bestaand stedelijk gebied worden optimaal benut dmv bijvoorbeeld opvulling, herbestemming of herstructureren (Ladder duurzame verstedelijking, SVIR, 2012).

Toelichting *ontlast juist de binnenstad van het kanaal*

Effect:
PositiefGeenNegatief

C. Uitbreiding

Bij uitbreiding buiten bestaand stedelijke gebied, worden mogelijkheden tot multimodale ontsluiting van de nieuwe locatie benut (Ladder duurzame verstedelijking, SVIR, 2012).

Toelichting *nat bedrijventerrein de Brand zou dit hebben kunnen opvullen maar dit is voorlopig uitgesteld*

Effect:
PositiefGeenNegatief

D. Meervoudig ruimtegebruik

Mogelijkheden om bestaande of geplande ruimte meervoudig te gebruiken worden optimaal benut.

Toelichting *Project geeft ook ruimte aan natuur, recreatie en stedelijke ontwikkeling*

Effect:
PositiefGeenNegatief

---

6. Ruimtelijke kwaliteit

In samenhang met ons ruimtegebruik, draagt een vergroting van de kwaliteit van ruimte bij aan een duurzame ruimteontwikkeling. Ook bijvoorbeeld de connectiviteit van gebieden, economische kansen en sociale veiligheid kunnen hierdoor vergroot worden. De kwaliteit wordt bepaald door de mate waarin ruimte onze activiteiten ondersteunen en flexibiliteit bieden om in de toekomst aan te kunnen blijven sluiten op veranderende eisen. Volgens Vitruvius bestaat ruimtelijke kwaliteit uit drie onderdelen: 1) Belevingswaarde (waardering, sfeer, identiteit en samenhang), 2) Gebruikswaarde (kwaliteit functies, variatie in grootte en type functies) en 3) Toekomstwaarde (flexibiliteit, anticipatie op toekomstige veranderingen).

A. Belevingswaarde

De belevingswaarde van het gebied, of de mate waarin gebruikers het gebied als positief ervaren, wordt versterkt. Denk hierbij aan bouwkundige elementen met cultuurhistorische waarde, sfeer, aanwezige landschapsstructuren, natuur en ruimtelijke samenhang.

Toelichting *Ruimte voor recreatie en de groene invulling zorgen voor een positieve belevingswaarde*

Effect:
PositiefGeenNegatief

B. Gebruikswaarde

De gebruikswaarde van het gebied wordt versterkt. Denk hierbij aan vergroting van de kwaliteit van functies en de variatie in grootte en type functies.

Toelichting | *Enigszins vergroot door recreatiemogelijkheden maar verder beperkt*

Effect:
~~Positief~~Geen~~Negatief~~

C. Toekomstwaarde

De toekomstwaarde van het gebied wordt vergroot. Denk hierbij aan flexibiliteit in het plan, een strategische aansluiting op zijn omgeving en anticipatie op toekomstige veranderingen.

Toelichting | *Structurerend element voor ruimtelijke inrichting was een 'open zone' garant stelt tussen rosmalen en den bosch*

Effect:
Positief~~Geen~~~~Negatief~~

D. Integraal ontwerp

Bestaande en geplande functies en omringende openbare ruimte zijn in samenhang met elkaar en versterken elkaar door een ruimtelijk integraal ontwerp (Kader Ruimtelijke Kwaliteit en Vormgeving, 2012, Rijkswaterstaat).

Toelichting | *Project vertoont een duidelijk samenhang met omliggende gebieden en ontwikkelingen*

Effect:
Positief~~Geen~~~~Negatief~~

7. Sociale relevantie

Voor een duurzame ontwikkeling van ruimte, is het belangrijk dat de ontwikkeling een positief effect heeft op het sociaal welzijn van zijn gebruikers en omwonenden. Hierbij dienen oplossingen te worden geboden voorzowel bestaande als toekomstige gebruikers, met in achtneming van de ruimtelijke gevolgen van demografische trends.Door aansluiting van de ontwikkeling bij zijn gebruikers ontstaat sociaal draagvlak (goedkeuring) en bewustwording voor de ontwikkeling, wat de haalbaarheid helpt vergroten. Het actief inzetten van lokale expertise kan hierbij helpen om lokale behoeftes van de gemeenschap te identificeren.

A. Sociaal welzijn

Het project draagt bij aan het sociaal welzijn van zijn gebruikers, omwonenden en andere betrokken partijen en individuen. Denk hierbij bijvoorbeeld aan de harmonie onder de bevolking en het vermijden van sociale barrièrewerking.

Toelichting | *kanaal heeft duidelijk een barrierefunctie*

Effect:
~~Positief~~~~Geen~~**Negatief**

B. Demografische samenstelling

Er worden oplossingen geboden voor de ruimtelijke gevolgen en eisen van de huidige aanwezige demografische groepen. Denk hierbij aan programmakeuze en vormgeving van de openbare ruimte.

Toelichting | *Geen effect*

Effect:
~~Positief~~Geen~~Negatief~~

Er worden oplossingen geboden voor de ruimtelijke gevolgen en eisen van relevante demografische ontwikkelingen (zoals vergrijzing of krimp). Denk hierbij bijvoorbeeld aan flexibiliteit en aanpasbaarheid van programma.

Toelichting | *Geen effet*

Effect:
~~Positief~~Geen~~Negatief~~

C. Sociaal draagvlak

Er is sociaal draagvlak aanwezig voor het project onder toekomstige gebruikers, omwoners en andere betrokken partijen en individuen.

Toelichting | *Ja en nee, enkele bewoners zijn fel tegen, anderzijds zijn er ook een hoop voorstanders*

Effect:
~~Positief~~Geen~~Negatief~~

D. Lokale expertise

Lokale expertise en specifieke kennis wordt verzameld en toegepast, om relevante behoeftes van de gemeenschap te identificeren en potentiele conflicten voor te zijn.

Toelichting | *Wordt wel enigszins gebruik van gemaakt, zij het heel beperkt*

Effect:
~~Positief~~Geen~~Negatief~~

8. Welzijn

Door ruimte zo in te richten dat een positieve bijdrage geleverd kan worden aan het welzijn en de gezondheid van bewoners, gebruikers en bezoekers, ontwikkelen we een duurzame en veilige leefomgeving. Met functies die onze gezondheid bevorderen en uitnodigen tot een gezonde levensstijl dragen we hier aan bij. Ook is het belangrijk onze veiligheid, zowel fysiek als sociaal, te waarborgen. Hinder en overige overlast dienen te worden voorkomen om een aantrekkelijk en leefbaar gebied te creëren.

A. Gezondheid

De te realiseren functies hebben een positieve bijdrage aan de gezondheid van de bewoners en bezoekers en nodigen uit tot een gezonde levensstijl.

Toelichting | *Geen effect*

Effect:
~~Positief~~Geen~~Negatief~~

Mogelijkheden om gezondheidsrisico's te minimaliseren of verwijderen worden benut. Denk hierbij bijvoorbeeld aan geluidshinder en luchtkwaliteit.

Toelichting | *Weinig effect, geluidsschermen geplaatst op een aantal plekken maar dit vanwege kruisende wegen of bestaand spoor*

Effect:
~~Positief~~Geen~~Negatief~~

B. Veiligheid

De fysieke veiligheid (lichaam) van de gebruikers en omwonenden van het gebied blijft tijdens de bouw, gebruik en sloop gewaarborgd. Denk hierbij aan bijvoorbeeld verkeersveiligheid.

Toelichting | *Normwaarden worden niet overschreden (TB 2008)*

Effect:
~~Positief~~Geen~~Negatief~~

De sociale veiligheid (geest) van de gebruikers en omwonenden van het gebied blijft tijdens de bouw, gebruik en sloop gewaarborgd. Denk hierbij bijvoorbeeld aan vermijden van gevoelens van dreiging, agressie of geweld.

Toelichting | *Geen maatregelen of effecten van bekend*

Effect:
~~Positief~~Geen~~Negatief~~

C. Hinder

Hinder door externe invloeden wordt voorkomen. Denk hierbij bijvoorbeeld aan trillingshinder, uitstoot van schadelijke stoffen, lichtvervuiling of zichthinder.

Toelichting | *Wordt enigszins beperkt waar de norm wordt overschreden (geluidsscherm)*

Effect:
~~Positief~~Geen~~Negatief~~

9. Bereikbaarheid

Door de bereikbaarheid van gebieden hoog te houden en gebruikswaarde van infrastructuursystemen te vergroten, kan de toekomstwaarde van een gebied worden vergroot. Bereikbaarheid heeft ook een sterke relatie met thema's als energie, ruimtegebruik, welzijn en economische thema's. Voor een duurzaam bereikbaar gebied is het belangrijk dat een robuust verkeerssysteem wordt ontwikkeld van verschillende vervoersmodaliteiten en knooppunten daartussen. Een efficiënt gebruik van bestaand en nieuwe infrastructuur kan helpen dit te bereiken en te besparen om ruimte, brandstof en tijd. Door een adaptief mobiliteitsbeleid en –netwerk kunnen we blijven inspringen op gewenste en ongewenste ontwikkelingen.

A. Robuust transportsysteem

De mobiliteitsmogelijkheden binnen verschillende verkeersmodaliteiten en overstapmogelijkheden hiertussen worden vergroot (Visie op Knooppunten, 2000).

Toelichting | *Ja, stimuleert multimodaal vervoer. Had echter nog beter gekund door de aanleg van nat bedrijventerrein van de Brand*

Effect:
Positief~~Geen~~~~Negatief~~

De betrouwbaarheid van de reismogelijkheden en de voorspelbaarheid van de reistijd wordt vergroot. Denk hierbij aan de reis van deur tot deur (SVIR, Bereikbaarheidsindicatoren).

Toelichting | *Oponthoud door open bruggen in de binnenstad wordt grotendeels verholpen*

Effect:
~~Positief~~~~Geen~~~~Negatief~~

B. **Efficiënt gebruik infrastructuur**

De positionering van programma en functies draagt bij aan de verkleining van de mobiliteitsvraag. Denk hierbij bijvoorbeeld aan dichtheid en functioneel ontwerp.

Toelichting *Minder vrachtauto's op de weg*

Effect:
~~Positief~~~~Geen~~~~Negatief~~

Mogelijkheden om de bestaande infrastructuur zo efficiënt mogelijk te gebruiken worden benut, voorafgaand aan eventuele ruimtelijke ingrepen. Denk hierbij aan openbaar vervoer, mobiliteitsmanagement en benutting (Ladder van Verdaas, 2004).

Toelichting *Is onderzocht maar is minder wenselijk*

Effect:
~~Positief~~Geen~~Negatief~~

C. **Bereikbaarheid functies**

De bereikbaarheid en connectiviteit van de belangrijkste functies en voorzieningen worden behouden of vergroot.

Toelichting *Wat betreft bedrijven aan het kanaal ja, de verbinding tussen rosmalen en den bosch wordt echter minder*

Effect:
~~Positief~~~~Geen~~**Negatief**

D. **Adaptief mobiliteitsbeleid**

Het project draagt bij aan een adaptief mobiliteitsbeleid en een flexibel infrastructuurnetwerk dat gewenste ontwikkelingen in de toekomst niet uitsluit.

Toelichting *Geen duidelijk effect*

Effect:
~~Positief~~Geen~~Negatief~~

10. Investeringen

Een duurzame financiering van een opgave is nodig om ontwikkelingen op de korte maar ook de lange termijn mogelijk te maken. Door na te denken hoe het project voordeel kan bieden voor mogelijke betrokken partijen, kunnen ook de kosten evenredig worden verdeeld (meekoppelkansen). Door in te zetten op de bestaande kwaliteiten van het gebied is de haalbaarheid hiervan het grootste. Financiële baten komen direct of indirect ten gunste van het project en zijn gebruikers.

A. **Evenredige kosten en baten**

Kansen om projectkosten en resulterende baten te delen met andere mogelijk betrokken partijen worden benut (Meerwaardescan, 2011).

Toelichting *Andere partijen betalen mee maar vooral vanuit hun wensen of verplichtingen, niet om per se samen kosten te delen*

Effect:
~~Positief~~Geen~~Negatief~~

B. **Gebiedskwaliteiten**

Aanwezige kwaliteiten van het gebied worden ingezet ter realisatie van financiële baten. Denk hierbij bijvoorbeeld aan ruimtelijke kwaliteit of vestigingsklimaat.

Toelichting *Niet toegepast. Nat bedrijventerrein de Brand zou hier eventueel invulling aan kunnen hebben geven*

Effect:
~~Positief~~Geen~~Negatief~~

C. **Aanwending van inkomsten**

Waardestijging van grond en vastgoed wordt direct of indirect besteed ten gunste van het project, zijn gebruikers en/of andere betrokkenen.

Toelichting *Voor zover bekend niet toegepast*

Effect:
~~Positief~~Geen~~Negatief~~

)

11. Vestigingsklimaat voor de bedrijvigheid

Om een economisch vitale en duurzame omgeving te ontwikkelen is het belangrijk een economisch beleid te formuleren dat aansluit bij de sterke en zwakke punten van de regio. Het is hierbij belangrijk het innovatie en –aanpassingsvermogen van de gebiedseconomie te vergroten, zodat kan worden ingesprongen op mogelijke onvoorziene situaties. Een aantrekkelijk vestigingsklimaat is een belangrijk onderdeel van dit beleid.

A. Vestigingsklimaat

De bereikbaarheid, aantrekkelijkheid en de ruimtelijke kwaliteit van het gebied wordt vergroot voor zowel bestaande als mogelijke nieuwe bedrijven.

Toelichting | *Geldt met name voor de bedrijven langs het kanaal in Veghel en Helmond*

Effect:
Positief ~~Geen~~ ~~Negatief~~

De aansluiting van de beroepsbevolking qua grootte, scholing en ervaring op de regionale arbeidsmarkt wordt verbeterd.

Toelichting | *Geen effect*

Effect:
~~Positief~~ Geen ~~Negatief~~

B. Economisch beleid

Er wordt invulling gegeven aan het economisch beleid op het voor het project relevante schaalniveau (nationaal, regionaal, lokaal).

Toelichting | *Volgt beleid, o.a. het SVIR*

Effect:
Positief ~~Geen~~ ~~Negatief~~

C. Innovatie- en aanpassingsvermogen

Er wordt bijgedragen aan het gewenste innovatie- en aanpassingsvermogen van de gebiedseconomie op lange termijn.

Toelichting | *Geen duidelijk effect*

Effect:
~~Positief~~ Geen ~~Negatief~~

12. Vestigingsklimaat voor de bevolking

De economisch vitaliteit van de bevolking vormt samen met die van de bedrijvigheid een essentieel onderdeel van een duurzame economie. Het is in dit kader belangrijk dat de werkgelegenheid aansluit bij de beroepsbevolking en hiervoor bereikbaar is. Aan de andere kant dient de beroepsbevolking te blijven ontwikkelen om aan te kunnen sluiten op de werkgelegenheid. Als laatste dient het lokale en regionale voorzieningenaanbod toereikend te zijn voor de wensen van de bevolking voor een aantrekkelijk vestigingsklimaat.

A. Werkgelegenheid

Er wordt een positieve bijdrage geleverd aan de werkgelegenheid op lange termijn, die past bij de ontwikkeling en vaardigheden van de regionale beroepsbevolking.

Toelichting | *Geen effect*

Effect:
~~Positief~~ Geen ~~Negatief~~

B. Bereikbaarheid arbeidsmarkt

De bereikbaarheid en transparantie van de arbeidsmarkt en hierbij benodigde voorzieningen worden vergroot. Denk hierbij bijvoorbeeld aan informatievoorziening over de arbeidsmarkt, reistijd en -kosten.

Toelichting | *Geen effect*

Effect:
~~Positief~~ Geen ~~Negatief~~

C. Ontwikkeling beroepsbevolking

Er wordt bijgedragen aan de ontwikkeling van de beroepsbevolking voor de lokale en regionale arbeidsmarkt. Denk hierbij aan het realiseren en verbeteren scholing en toegankelijker maken van kennis en ervaring.

Toelichting | *Geen effect*

Effect:
~~Positief~~ Geen ~~Negatief~~

D. Voorzieningenaanbod

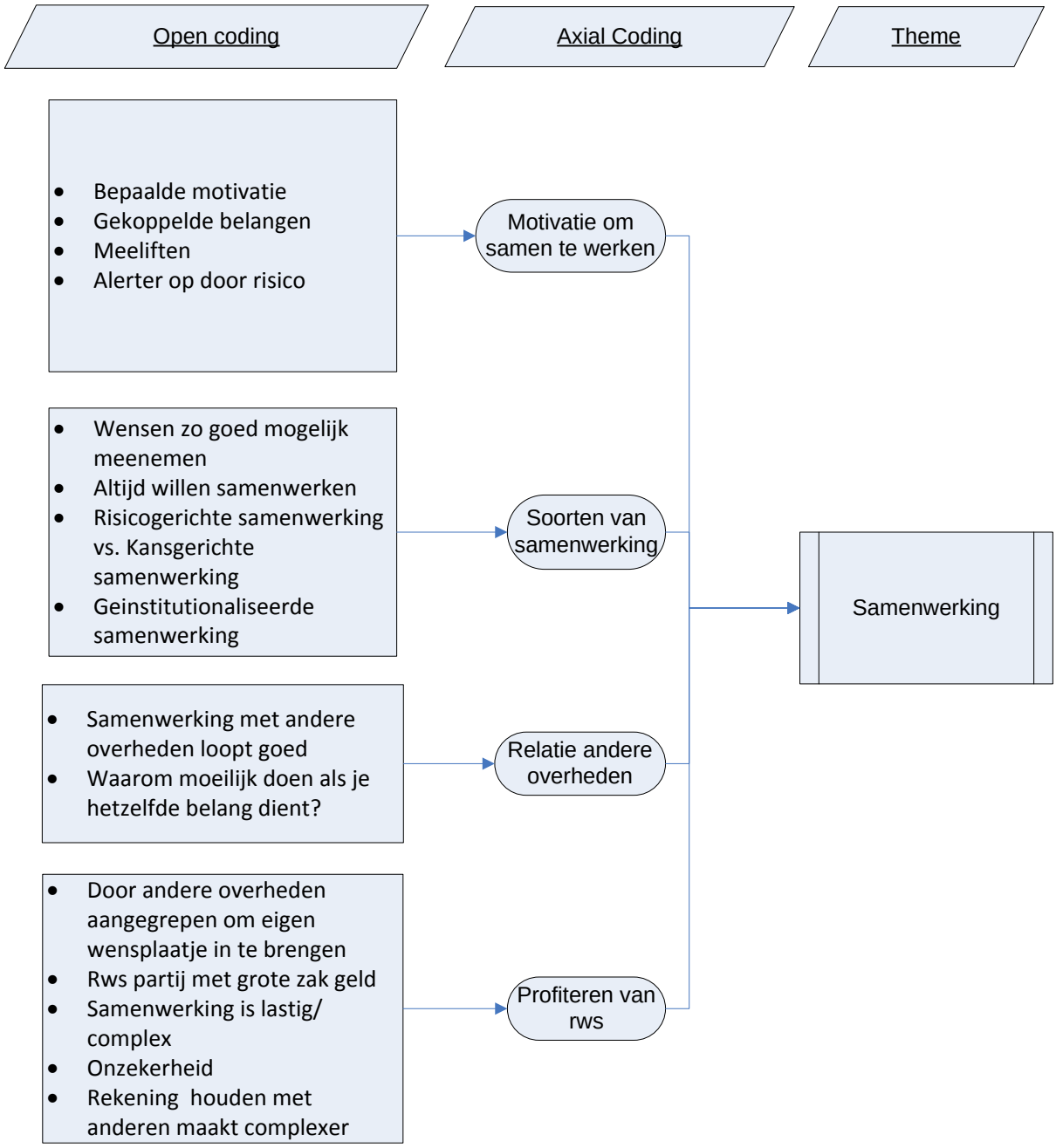

Er wordt bijgedragen aan verbetering van het voorzieningenaanbod voor de bevolking. Denk hierbij bijvoorbeeld aan diversiteit, kwaliteit, bereikbaarheid en kosten van voorzieningen.
Toelichting
Geen effect
Effect:
PositiefGeenNegatief

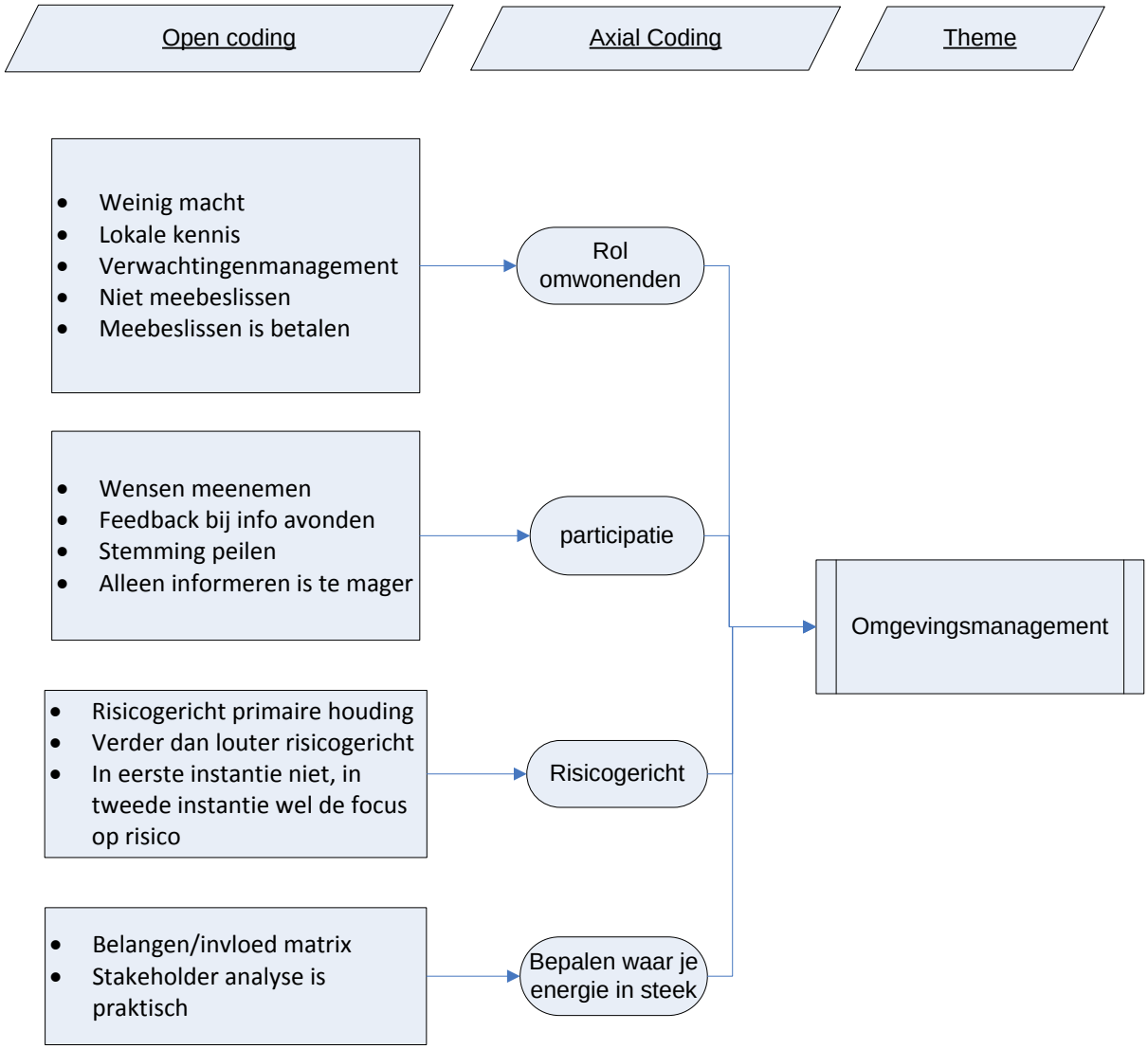
Annex V: Focus Group Statements

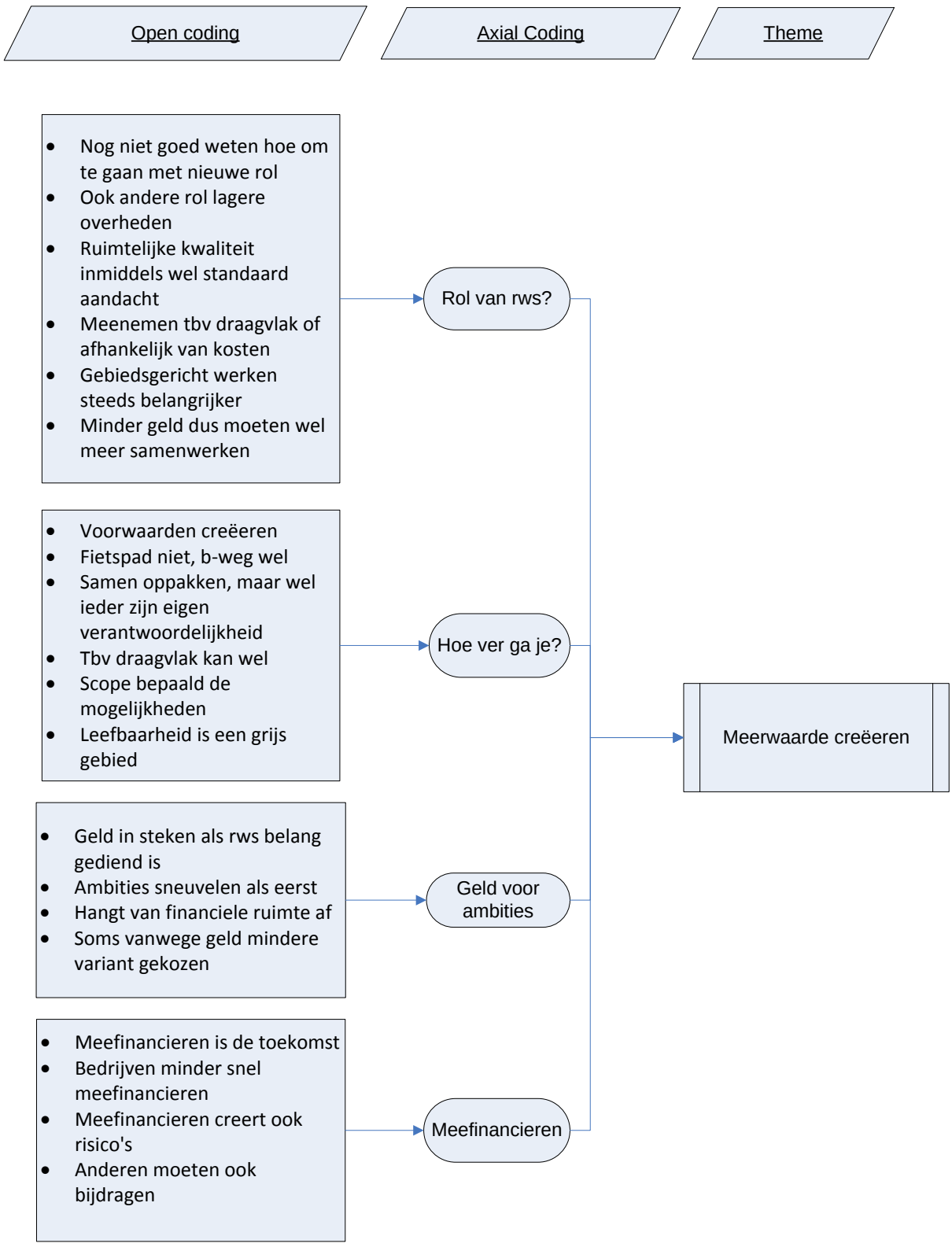
The following statements were discussed during the focus Group discussion (in Dutch):

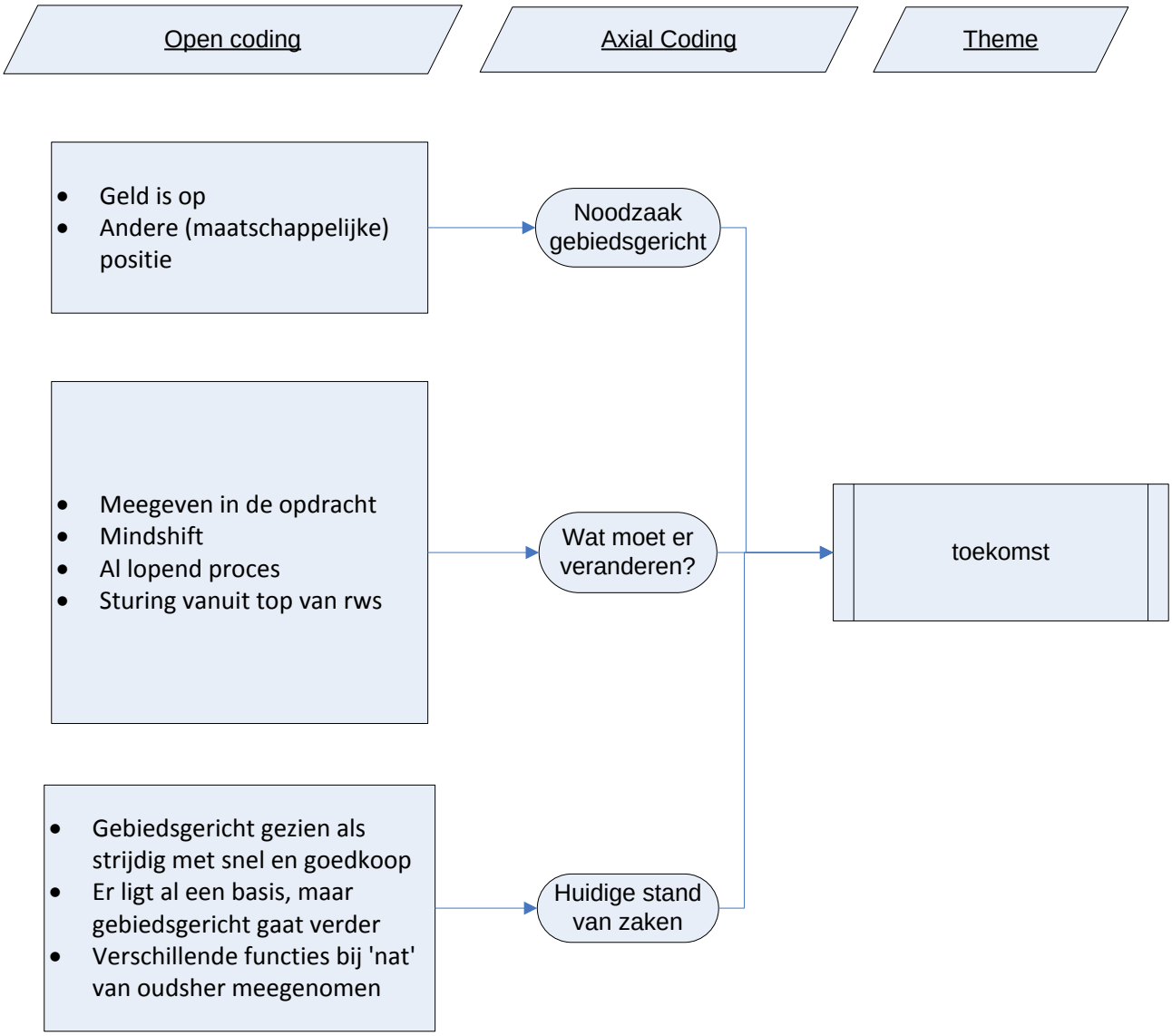
- Echte samenwerking vindt alleen plaats als er sprake is van tegengestelde belangen of afhankelijkheid
- Participatie van omwonenden volstaat met informeren
- Stakeholderanalyses en omgevingsmanagement zijn risico-gericht
- Rol van RWS: infra aanleggen en negatieve effecten daarvan vereffenen
- Ambities van een project mogen/wel geen geld kosten
- Aangezien er niet op wordt gestuurd is het gebiedsgericht werken een kwestie persoonlijke toewijding
- Samenwerking met andere overheden verlopen vaak stroef, waarom?
- Gebiedsgericht infra aanleggen is thé way to go
- Wat moet er gebeuren om gebiedsgericht werken echt van de grond te krijgen?

Annex VI: Focus Group coding schemes




Open coding
Axial Coding
Theme
Weinig macht
Lokale kennis
Verwachtingenmanagement
Niet meebeslissen
Meebeslissen is betalen
Rol omwonenden
Wensen meenemen
Feedback bij info avonden
Stemming peilen
Alleen informeren is te mager
participatie
Risicogericht primaire houding
Verder dan louter risicogericht
In eerste instantie niet, in tweede instantie wel de focus op risico
Risicogericht
Belangen/invloed matrix
Stakeholder analyse is praktisch
Bepalen waar je energie in steek
Omgevingsmanagement


Open coding
Axial Coding
Theme
Nog niet goed weten hoe om te gaan met nieuwe rol
Ook andere rol lagere overheden
Ruimtelijke kwaliteit inmiddels wel standaard aandacht
Meenemen tbv draagvlak of afhankelijk van kosten
Gebiedsgericht werken steeds belangrijker
Minder geld dus moeten wel meer samenwerken
Rol van rws?
Voorwaarden creëeren
Fietspad niet, b-weg wel
Samen oppakken, maar wel ieder zijn eigen verantwoordelijkheid
Tbv draagvlak kan wel
Scope bepaald de mogelijkheden
Leefbaarheid is een grijs gebied
Hoe ver ga je?
Geld in steken als rws belang gediend is
Ambities sneuvelen als eerst
Hangt van financiele ruimte af
Soms vanwege geld mindere variant gekozen
Geld voor ambities
Meefinancieren is de toekomst
Bedrijven minder snel meefinancieren
Meefinancieren creert ook risico's
Anderen moeten ook bijdragen
Meefinancieren
Meerwaarde creëeren


Open coding
Axial Coding
Theme
Geld is op
Andere (maatschappelijke) positie
Noodzaak gebiedsgericht
Meegeven in de opdracht
Mindshift
Al lopend proces
Sturing vanuit top van rws
Wat moet er veranderen?
toekomst
Gebiedsgericht gezien als strijdig met snel en goedkoop
Er ligt al een basis, maar gebiedsgericht gaat verder
Verschillende functies bij 'nat' van oudsher meegenomen
Huidige stand van zaken

Annex VII: Abbreviations

- DBFM: Design, Build, Finance & Maintain
- MIRT: Meerjarenprogramma Infrastructuur Ruimte en Transport (Long-range infrastructure, spatial and transport programme)
- HIA: Heritage Impact Assessment
- MEAT: Most Economically Advantageous Tender
- PBL: Planbureau voor de Leefomgeving (Netherlands Environmental Assessment Agency)
- RCE: Rijksdienst voor Cultureel Erfgoed (Cultural Heritage Agency)
- SOM: Strategisch Omgevings Management (Strategic Environs Management)
- VONK: Vervangings Opgave Natte Kunstwerken (Replacement program of Hydraulic Structures)